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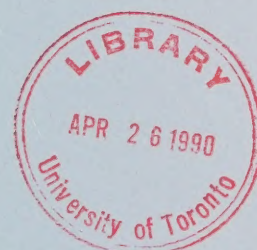
ENVIRONMENTAL ASSESSMENT BOARD

VOLUME: 195

DATE: Thursday, April 19th, 1990

BEFORE: A. KOVEN, Chairman

E. MARTEL, Member



FOR HEARING UPDATES CALL (TOLL-FREE): 1-800-387-8810

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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental
Assessment for Timber Management on Crown
Lands in Ontario;

- and -

IN THE MATTER OF a Notice by the
Honourable Jim Bradley, Minister of the
Environment, requiring the Environmental
Assessment Board to hold a hearing with
respect to a Class Environmental
Assessment (No. NR-AA-30) of an
undertaking by the Ministry of Natural
Resources for the activity of timber
management on Crown Lands in Ontario.

Hearing held at the Ramada Prince Arthur
Hotel, 17 N. Cumberland Street, Thunder Bay,
Ontario on Thursday, April 19th, 1990,
commencing at 8:00 a.m.

VOLUME 195

BEFORE:

MRS. ANNE KOVEN
MR. ELIE MARTEL

Chairman
Member



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MR. C. BRUNETTA	NORTHWESTERN ONTARIO TOURISM ASSOCIATION

I N D E X O F P R O C E E D I N G S

<u>Witness:</u>	<u>Page No.</u>
<u>GARY MacKAY,</u>	
<u>IAN ROBERT METHVEN,</u>	
<u>DONALD B. HOPKINS,</u>	
<u>WILLIAM J. ROLL,</u>	
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I N D E X O F E X H I B I T S

<u>Exhibit No.</u>	<u>Description</u>	<u>Page No.</u>
1125	OFAH draft terms and conditions.	34442
1126	MNR Interrogatory Question No. 6 for OFIA/OLMA Panel 6.	34644

1 ---Upon commencing at 8:00 a.m.

2 MADAM CHAIR: Good morning, Mr. Hanna.

3 MR. HANNA: Good morning, Madam Chairman.

4 GARY MacKAY,
5 IAN ROBERT METHVEN,
6 DONALD B. HOPKINS,
7 WILLIAM J. ROLL,
8 DONALD R. JOHNSTON,
9 PETER MITCHELL MURRAY, Resumed

10 MR. HOPKINS: Excuse me, Madam Chair, Mr.
11 Hanna. I have a correction to make to some evidence I
12 gave yesterday to Ms. Swenarchuk.

13 MADAM CHAIR: Please go ahead, Mr.
14 MacKay.

15 MR. MacKAY: She asked me the weight of a
16 conventional skidder, I think I said 15- to 20 tons,
17 and if I did, that is incorrect. I meant 15- to 20,000
18 pounds, 15 being a light machine and 20 being more of
19 an average weight.

20 MR. HANNA: Madam Chair, one matter
21 before I begin my cross-examination.

22 I received a letter yesterday by fax from
23 Ms. Devaul regarding my request for leave to
24 cross-examine this panel, and it was indicated to me at
25 that time that you wished to have a letter that would
be read into the record, and I don't know whether you
want to proceed with that or not, but if you do, I am

1 prepared; if not, that's fine.

2 MADAM CHAIR: We can take care of that,
3 Mr. Hanna. Do you have something ready to read?

4 MR. HANNA: Yes, Madam Chair, I do. I
5 would suggest -- Madam Chair, if we do this, I would
6 request that three things be read; the first is the
7 letter that I sent to you requesting leave dated April
8 17th, the reply that I received on April 18th from the
9 Board and Ms. Devaul, and then finally the response
10 that I have. They are all one-page letters, I don't
11 think they will take very long.

12 MADAM CHAIR: Go ahead, Mr. Hanna.

13 MR. HANNA: The first letter I will read
14 is the letter under my signature submitted to the Board
15 requesting leave.

16 "Dear Madam Chair:

17 Attached is the OFAH statement of
18 issues for the above panel. I realize
19 that the deadline for statements of
20 issues is past but would ask for your
21 leave to cross-examine this panel.

22 As you may know, the Ontario
23 Federation of Anglers & Hunters has
24 invested a great deal of effort recently
25 in: (1) preparing its draft terms and

1 conditions; (2) the on-going negotiation
2 process; and, (3) various stakeholder and
3 technical committees relating to effects
4 monitoring. This has placed extreme
5 demands upon its already limited
6 resources.

7 Also, as you are aware, the OFAH has
8 receive no intervenor funding or
9 supplementary legal aid up to this point
10 in the hearing. This has seriously
11 restricted its ability to participate
12 in the hearing process. For example, the
13 OFAH has not had the resources to even
14 prepare one set of interrogatories for
15 the forest industry's witness statements.

16 Delay in submitting this statement
17 of issues in way reflects a lack of
18 interest with regards to the substance of
19 the evidence; likewise, it in no way
20 reflects any disrespect for the hearing
21 process established for this case.

22 Instead it is simply a reflection that
23 even the Province's largest conservation
24 organization cannot participate in a
25 hearing of this scope and duration

1 essentially through its own resources.

2 In light of these circumstance, I
3 ask that you grant the Ontario Federation
4 of Anglers & Hunters leave to
5 cross-examine the OFIA/OLMA Panel 6
6 dealing with harvest.

7 Yourself respectfully, Edward Hanna."

8 The next letter is dated April 18th, 1990
9 which I received yesterday by fax. It's under the
10 Environmental Assessment Board's letterhead.

11 "Dear Mr. Hanna:

12 The Board has granted you leave on
13 behalf of the Ontario Federation of
14 Anglers & Hunters to cross-examine the
15 witnesses of Panel 6 of the forest
16 industry case, however, the Board
17 requires that you make a commitment in
18 writing that you will meet all future
19 deadlines with respect to scoping and
20 other matters.

21 The conduct of your party has become
22 an issue in terms of expediting this
23 timber management hearing. Your apparent
24 inability to meet scheduling deadlines is
25 causing inconvenience to other parties

1 and to this Board.

2 You must be aware that the Board
3 will not grant leave automatically to
4 cross-examine if you continue to ignore
5 deadlines for statements of issues;
6 therefore, the Board requires that you
7 deliver your letter of commitment on
8 Thursday, April 19th, 1990. This
9 letter will be read into the record.
10 Yours truly, Michele Devaul."

11 MR. HANNA: I will now read a letter
12 dated April 18th, 1990 under J. E Hanna Associates
13 letterhead and my signature.

14 "Dear Madam Chair:

15 On behalf of the Ontario Federation
16 of Anglers & Hunters, I acknowledge
17 receipt of your April 18th, 1990 letter
18 suggesting that the OFAH inability to
19 meet certain scheduling deadlines is
20 causing inconvenience to the Board and
21 other parties. I wish to assure the
22 Board that neither the OFAH or I have
23 ever ignored deadlines for statements of
24 issues or any other deadlline established
25 in this hearing.

1 Those occasions where it has been
2 physically impossible for us to meet
3 deadlines have been due solely to the
4 very real financial difficulties of
5 participating in this case. We will
6 continue in the future as we have in the
7 past to make every reasonable effort to
8 meet all deadlines imposed by the Board.

9 Without the benefit of any
10 intervenor funding to date we have made
11 great sacrifices personally and
12 corporately to meaningfully contribute
13 to this process and we continue to make
14 these extraordinary efforts because our
15 forest resources and its associated
16 environment are so important to every
17 resident of this province and especially
18 tens of thousands of Ontario citizens who
19 the OFAH represents.

20 We are not aware of any significant
21 delays to the hearing caused by our
22 conduct at any point so far and are most
23 concerned about this serious allegation.
24 The OFAH has made every effort to conduct
25 its representation in the most publically

1 responsible fashion possible. The OFAH
2 will continue to conduct its
3 representations to these high standards.

4 Thank you for granting us leave on
5 this occasion to cross-examine Panel 6 of
6 the forest industry.

7 Your sincerely, Edward Hanna."

8 MADAM CHAIR: Thank you very much, Mr.
9 Hanna. Are you going to proceed?

10 MR. HANNA: I have copies of those if you
11 wish, I can submit those later to the Board.

12 MADAM CHAIR: That is fine, to Ms.
13 Devaul.

14 Are you ready to proceed with your
15 cross-examination?

16 MR. HANNA: Yes I am.

17 CROSS-EXAMINATION BY MR. HANNA:

18 Q. Good morning, panel. I see some
19 familiar faces.

20 I am going to be spending much of my
21 cross-examination dealing only with two of the panel
22 members, Dr. Methven and Mr. Roll and, Dr. Methven, I
23 will be starting with you.

24 And what I have done, the
25 cross-examination is organized in this way, I have

1 simply gone through section by section of the witness
2 statement you submitted and structured my questions
3 around the submissions that you have made in the same
4 sort of fashion, so we will be following it through in
5 that sort of order.

6 And I would like to start first with
7 Section 8.1 which I believe is on page 42.

8 MR. CASSIDY: Just before we commence,
9 Madam Chair, Mr. Hanna has not advised me in advance of
10 any documents or transcript references that he wished
11 the witnesses to review in advance of this
12 cross-examination.

13 So I am operating, I believe the
14 witnesses, I assume, are operating under the assumption
15 that there are no such documents. If there are, the
16 witnesses are going to have a difficult time, given
17 that they have not been advised.

18 So I just wanted to make that clear on
19 the record.

20 MR. HANNA: Madam Chair, perhaps I can
21 clarify that right now. I am not anticipating
22 referring to any documents at this time. There is one
23 matter though that we probably should deal with now and
24 that is, in my last cross-examination and this
25 cross-examination as a result of directions that the

1 Board gave to the parties some months ago in terms of
2 preparing draft terms and conditions, I will be
3 referring to my draft terms and conditions through the
4 course of my cross-examination.

5 The reason I raise that at this point is
6 I do not believe that it has been entered as a formal
7 exhibit in the hearing and I have again prepared for
8 the panel and for anyone who doesn't have it in the
9 room excerpts from the terms and conditions, but I
10 think in terms of keeping the record straight it might
11 be appropriate to give it an exhibit number.

12 I believe we have already done that with
13 the Ministry's terms and conditions and it might assist
14 us in terms of following through the discussion.

15 MADAM CHAIR: Would you like to do that
16 now, Mr. Hanna?

17 MR. HANNA: Certainly.

18 MADAM CHAIR: That will be Exhibit 1125.
19 ---EXHIBIT NO. 1125: OFAH draft terms and conditions.

20 MR. HANNA: Thank you.

21 Q. Dr. Methven, on page 42, paragraph 1
22 you indicate that fire control has greatly impaired the
23 health of the forest. Can you explain to me what you
24 mean by 'health' in this context?

25 DR. METHVEN: A. I mean a renewed forest

1 with a mixture of age-classes.

2 Q. So does health relate primarily to
3 timber production in this context?

4 A. No, it does not.

5 Q. Can you give me an example where, for
6 example, wildlife species has been greatly impaired in
7 its health of its population?

8 A. I am talking about the forest here.
9 All I am saying is when a forest isn't renewed you get
10 a heavy bias towards old age-classes and relatively few
11 young age-classes.

12 Q. Yes, I understand that, but you are
13 speaking in terms of timber production when you say
14 that?

15 A. No, I am not.

16 Q. Well then, can you give me an example
17 of - how do you say - an element of the forest other
18 than trees that the health is impaired in the way that
19 you have used the term here?

20 A. I was referring to the forest. Under
21 the fire cycle natural situation we have a high
22 proportion of young age-class and much lower proportion
23 of older stands. As soon as we impose fire control we
24 make a radical change to that structure.

25 Q. Yes, I understand that. I guess what

1 I am trying to get at is: The concept of health has
2 some normative connotations to it; I am healthy or I am
3 sick, and that is based upon some statement of how you
4 expect me to be. Do you follow what I mean?

5 A. No.

6 Q. Well, let me put it this way then:
7 The change in the forest structure you have talked
8 about could benefit and make more healthy some species
9 of wildlife -- forest wildlife and it could hinder
10 other species; is that not correct?

11 A. Any change in structure will do that,
12 yes.

13 Q. And so that the concept of health has
14 some normative connotations to it?

15 A. Yes, the structure associated with an
16 natural fire cycle of course.

17 Q. And is it fair for me to say then
18 that as you move away from that structure that, in the
19 way that you have used the term here, will change the
20 health, will impair the health of the forest, that
21 natural structure?

22 A. If age-classes are not being renewed.

23 Q. Okay. I would like to move now to
24 the bottom of page 42, and you indicate here - I have
25 itemized them as three components in that first

1 sentence.

2 The first is that you say it's impossible
3 (1) to maximize all of these benefits, all of these
4 forest benefits at the same time; (2) to enjoy all of
5 these benefits at the same place in time; and, (3) that
6 different groups place different priorities on these
7 benefits. There is three elements to that statement;
8 would you agree with that?

9 A. That is correct.

10 Q. Now, that sounds very similar to what
11 we have heard Dr. Baskerville say before this hearing.
12 You are familiar with Dr. Baskerville's view on a
13 similar sort of -- it's almost a dogma within forestry
14 that we do have these problems.

15 A. Dogma has to do with religion and not
16 with scientific proportion.

17 Q. Let's take away dogma then. Are you
18 familiar that this is a well-accepted principle?

19 A. It's a principle that I have
20 expressed here, yes.

21 Q. Now, given the fact you say that it's
22 impossible, is it fair to conclude then that tradeoffs
23 are an inevitable and essential element in any timber
24 management planning process?

25 A. Yes.

1 Q. Does it follow then, in your view,
2 that an efficient conflict resolution mechanism is
3 essential for permitting timber management in our
4 society?

5 A. And that is what the planning process
6 is about, yes.

7 Q. Now, the third point there, that
8 different groups place different priorities on these
9 benefits. Would you agree that one of the groups that
10 you are referring to on the bottom of page 42 would
11 include the forest industry?

12 A. Certainly all groups in society, yes.

13 Q. And is it fair to say also that the
14 priorities the forest industry might place on tradeoffs
15 among certain forest benefits might be different than
16 those that might be assigned by say a local native
17 band?

18 A. True.

19 Q. Would you agree that the forest
20 industry, however, has a right to state its priorities
21 as much as any other group?

22 A. Yes.

23 Q. So the really difficult issue in this
24 whole exercise is the process whereby the differing
25 priorities among the groups are compromised and a joint

1 set of priorities for all groups is decided upon as the
2 basis to direct the management of the forest?

3 A. I am not sure that I would agree with
4 the word compromise because this process results in a
5 lot of education and increased understanding. So it
6 may not necessarily be a compromise, it may be a common
7 agreement.

8 Q. Right, but if I go back to your
9 statement, you say it is impossible to maximize all
10 these benefits at the same time.

11 A. Maximize was the word used.

12 Q. So that means if I have got a
13 priority and that is that benefit, I want to have that
14 maximized and if someone else has a different priority
15 and they want to maximize that benefit, to come to a
16 decision somebody has to be compromised, it may be both
17 of us or one or the other?

18 A. As a result of the process you may
19 come to the conclusion that maximizing all benefits is
20 not the right thing to do.

21 Q. Oh I agree, but in so doing I am
22 therefore compromising the maximum enjoyment that I
23 might receive?

24 A. You may have changed your views as a
25 result of the process.

1 Q. Do you see the establishment of the
2 joint priorities being an essential component of
3 effective timber management?

4 A. Yes.

5 Q. I am sure you are aware of Dr.
6 Baskerville's writing on the use of objectives versus
7 constraints for timber management?

8 A. Yes, I am.

9 Q. Do you see the development of
10 specific quantitative objectives for a forest
11 management unit - and I am talking now at the
12 management unit level - as being the best way to decide
13 upon these joint priorities and to provide appropriate
14 direction to timber managers?

15 A. Yes, I do.

16 Q. I would like to look now at page 43,
17 the first full paragraph there and it's my
18 understanding of that paragraph it basically puts in
19 context the problem of timber management from the
20 Industry's perspective; is that correct?

21 MR. CASSIDY: No, that is not correct.
22 This is this witness' view in respect of this and it's
23 the views that he shares or he has perceived that
24 industry faces.

25 MR. HANNA: Madam Chair, I appreciate Mr.

1 Cassidy's assistance to try to keep things straight on
2 the record, but I really don't feel that that is
3 appropriate objection.

4 I think this witness is an experienced
5 witnesses, he's quite able to say: No, this is not the
6 case. I don't think Mr. Cassidy has to answer the
7 question for the witness.

8 MADAM CHAIR: And what was the question,
9 Mr. Hanna?

10 MR. HANNA: Q. This is your view, Dr.
11 Methven, of the forest management dilemma from the
12 Industry's perspective in terms of keeping all the
13 balls in the air at the same time?

14 DR. METHVEN: A. I am sorry, I am having
15 difficulty. What precise sentence are you referring
16 to?

17 Q. Sure. The first sentence, again I
18 have itemized it and I see here five components to this
19 first sentence that you describe, and I will list them
20 for you.

21 A. Page 43?

22 Q. Page 43, the first full paragraph
23 starting with "The problem faced by the Industry." And
24 I will just tell you how I have broken it up and just
25 make sure that it's consistent with the way that you

1 meant to write this.

2 The first part is how to continue to
3 produce the benefits demanded by society, No. 1; No. 2,
4 how to stay in business; No. 3, how to resolve
5 conflicts; No. 4, how to compensate for the natural
6 role of fire; and, No. 5, to ensure the renewal of
7 future development of the forest.

8 These are the five sort of elements that
9 all have to considered in terms of point of view of
10 this problem.

11 A. These are some of the elements that
12 need to be considered, yes.

13 Q. Okay. And you are saying it's not
14 inclusive?

15 A. No, it's not.

16 Q. Okay. Now, the first point you make
17 is that the forest industry has to deal with how to
18 produce the benefits demanded by society. Now, is not
19 the first step to clearly define the actual benefits
20 that are being demanded?

21 A. The land is owned by the public and,
22 therefore, the public needs to decide what benefits
23 they wish to receive from that landscape and that comes
24 up presumably in the planning process, yes.

25 Q. No, we are fully on the same wave

1 length with that. I think the point that I am trying
2 to make is: Your statement is how to continue to
3 produce the benefits demanded by society, and is not
4 there even something preceding that and; that is, it's
5 one thing to produce those demands, but you can't
6 produce demands unless they include the five, this is
7 what the public is demanding from the land base.

8 Would you agree with that?

9 A. Objectives will be set out in the
10 planning process, that is true, and that comes first,
11 yes.

12 Q. And I gather what you're saying, that
13 this is the principal philosophy underlying the
14 development objectives for timber and non-timber values
15 in a timber management plan, you set out very clear,
16 this is what we want from the land base?

17 A. The process will decide what is
18 desired from the land base, yes.

19 Q. And an outcome of that process is
20 these clear objectives, these clear directions in terms
21 of the demands from the land base.

22 A. And the Industry is faced with then
23 implementing those, yes.

24 Q. Correct. Okay. Now, if the forest
25 industry were provided with clear statements of the

1 benefits or objectives that were to be produced from a
2 forest management unit over time and space, would this
3 not provide company foresters with the necessary
4 boundaries - and I key in on that term boundaries -
5 within which they could deal with the other components
6 of the problem you have listed in the first paragraph?

7 A. I am sorry, I am not quite sure what
8 you mean by boundaries.

9 Q. Let me try again. This is a
10 recurrent issue that I am going to be coming back to in
11 my cross-examination and, Mr. Roll, something I will be
12 dealing with you on later in the day.

13 I understand the Industry's position of
14 wanting to have flexibility and ability to choose the
15 best prescription for a specific site and that is very
16 difficult to know until you have got a specific site,
17 whatever, and I am looking at how we can achieve that
18 efficiently without tying the hands of the Industry and
19 yet assuring that the public will is still met. That
20 is where I am coming from at this point.

21 And the proposal I am putting to you is,
22 if the forest manager said: You produce this from the
23 land base in terms of the various benefits that we want
24 from the forest land base, you say to the manager: You
25 produce that, now how you produce that, that is your

1 skill and expertise, the art that you have as a
2 forester, and so in that way it's defining the
3 boundaries.

4 In other words, as long as you achieve
5 those objectives, how you achieve them then we will
6 basically turn over to you. Do you follow that sort
7 of...

8 A. Yes, the public sets the objectives
9 and professional foresters then have to design
10 implementation to achieve those objectives, yes.

11 Q. And the more explicit and the more
12 defined that you can be in terms of the objectives that
13 need to be achieved from the land base, the more
14 confident the forester is in terms of being able to
15 assess whether or not he's doing what is being
16 requested of him?

17 A. That is true.

18 Q. Now, back to the paragraph here and
19 the third point in that first sentence, how to resolve
20 conflicts between different groups in society.

21 Would the establishment of timber and
22 non-timber objectives in the timber management plan in
23 a very clear and defined way not also relieve the
24 Industry of having to resolve on an ongoing basis these
25 conflicts between different groups in society?

1 A. I presume the process - but I have no
2 insight into Ontario's plans and issues - but I presume
3 the process will finally lead towards an integrated
4 forest management plan, yes.

5 Q. Dr. Methven, I am not in any way here
6 asking you to pass judgment on the planning process
7 that has been proposed by any of the parties, I am
8 asking you from your knowledge and extensive knowledge
9 of forest management planning and forest dynamics if
10 you can live with this, from your professional opinion,
11 I am not asking you here to pass critique on the
12 proposal.

13 A. Live with the inclusion of multiple
14 objectives?

15 Q. Well, let me go back to what I was
16 saying. If you establish in the timber management plan
17 very clear objectives so that the forest manager knows
18 specifically what he is expected to produce from the
19 land base and that is decided in the process - okay,
20 before the forest manager starts to actually do what he
21 is going to do - does this not relieve him of having to
22 resolve on an ongoing basis conflicts between different
23 groups in society, conflicts that aren't resolved in
24 the planning process?

25 A. I am having difficulty comprehending.

1 All I can say - and I hope that this addresses your
2 question - is that what you are in fact referring to is
3 the integrated forest management plan, and it is the
4 management foresters that have to implement that
5 plan -- have the plan and they will try to implement
6 it.

7 Q. Yes, I appreciate that. Here's where
8 I am coming from on it. If through the timber
9 management planning process there is a number of
10 tradeoffs that don't get explicitly dealt with, they
11 are only dealt with on a case-by-case basis when the
12 plan is implemented, there is potential for ongoing
13 conflict; would you agree with that?

14 A. Yes, that's always going to be
15 present.

16 Q. And one way to minimize that type of
17 conflict is to establish in the timber management
18 planning process, the process prior to the
19 implementation, as clear a set of objectives, of
20 products, of benefits - whatever you want to call
21 them - from the forest land base so the forest manager
22 has a clear set of directions in terms of what he has
23 to do for the land base?

24 A. Certainly, that would be the
25 integrated forest management planning process, yes.

1 Q. I would like now to look at the last
2 sentence in that first paragraph which says:

3 "Once this is understood...", and I
4 believe you are referring to here the matter of forest
5 dynamics and the role of disturbance:

6 "... (and placed in a socio-economic
7 context), then policy discussions on
8 integrated resource management and
9 environmental evaluation can be conducted
10 on a rationale productive basis."

11 What I would like to know is what you
12 mean in this context by 'placed in an socio-economic
13 context'?

14 A. It's just this -- all of this is just
15 part of society, that is all, and there is economics
16 involved. So we can't just look at landscape dynamics,
17 we have to look at the whole thing because, as I said
18 before, it's land owned by the public and the public
19 get the benefits from it.

20 Q. Yes. Were you thinking of anything
21 specific in terms of evaluation processes? Like do you
22 have a concept of how you would actually put something
23 in a socio-economic context?

24 A. It just is, and I am sorry. There
25 is products that are sold in the market, there is

1 employment, there is recreational needs, those are all
2 socio-economic.

3 Q. So what you are saying is, you would
4 want to reflect the dynamics of the forest structure in
5 terms that are meaningful from a socio-economic
6 context?

7 A. Yes. If we ignore the socio-economic
8 context we would just burn the whole thing regularly.

9 Q. Okay. Now, in terms of the
10 objectives that would be expressed in the timber
11 management plan, they often would be expressed in
12 physical and biological terms; "x" amount of wood, "x"
13 number of areas of moose habitat or old growth forest,
14 or whatever it is.

15 Those are physical and biological terms,
16 that's how the objectives from that point of view would
17 be expressed; correct?

18 A. Yes, they need to be measurable and
19 quantitative otherwise you don't know whether you are
20 reaching them or not, yes.

21 Q. Right. But they must be established
22 based on fundamental socio-economic principles and
23 evaluations; the socio-economic evaluations lead you to
24 those physically -- desired physical and biological
25 outputs; is that correct?

1 A. Yes, society decides what they will
2 be, yes.

3 Q. Now, is one of these socio-economic
4 principles the need to evaluate benefits and
5 disbenefits that will be realized by different groups
6 within society from different production possibilities
7 for a forest management unit?

8 A. I am sorry, you lost me on that.

9 Q. Okay. You are familiar with the term
10 production possibilities as Dr. Baskerville uses it?

11 A. Yes.

12 Q. Dealing with this matter of putting
13 things in a socio-economic context, I am asking you:
14 Is it your view that one of the components of the
15 assessment is the need to evaluate benefits and
16 disbenefits that will be realized by different groups
17 within society from different production possibilities
18 from a forest management unit?

19 A. Yes.

20 Q. Do you see an advantage in
21 undertaking such assessments using explicit
22 cause/effect analyses based on quantitative
23 relationships?

24 A. Yes.

25 Q. In your resume on page 24, and you

1 need not refer to it, I think you are familiar with it,
2 you have given a presentation of adaptive management.

3 I expect you are familiar also with the
4 paper that Dr. Baskerville has published in 1985 on
5 adaptive which lists nine steps involved in the
6 adaptive management process?

7 A. Yes.

8 Q. Do you agree with the steps as he has
9 laid them out?

10 A. Yes.

11 Q. Is it your view that in the practice
12 of adaptive management it requires that cause/effect
13 relationships be developed and expressed in explicit
14 quantitative terms?

15 A. Yes.

16 Q. Is it your view that the adaptive
17 management principle can be applied to all aspects of
18 timber management?

19 A. Yes, but for anyone who has tried to
20 implement it is not an easy process.

21 Q. Timber management is not an easy
22 process?

23 A. No, the adaptive management process.

24 Q. But timber management also is not an
25 easy process?

1 A. I agree.

2 Q. Is timber management without adaptive
3 management an easier process?

4 A. I would just say it's different.

5 Q. In your view should adaptive
6 management be applied in timber management to the
7 extent that it's practical and reasonably possible?

8 A. Yes. Total forest management, yes.

9 Q. I would like now to turn to Section
10 8.3 of your witness statement and specifically the
11 sentence that begins at the bottom of page 45 and
12 continues over to page 46. It starts with:

13 "The elimination of environmental forces
14 such as fire will and has caused
15 disruption of the normal functioning of
16 adaptive eco-systems and must be
17 compensated for if conservation is an
18 objective."

19 A. Yes.

20 Q. I believe the Ministry of Natural
21 Resources in one of the interrogatories asked what you
22 meant by conservation in this context. You are
23 familiar with that?

24 A. Yes.

25 Q. And the answer was:

1 "Conservation in this context refers to
2 wise sustainable use of forest resources
3 whether for consumptive or
4 non-consumptive purposes."

5 I take it you agree with that response?

6 A. Yes.

7 Q. So conservation does not mean strict
8 maintenance of the status quo but some semblance of the
9 status quo; is that correct?

10 A. I don't think so if I'm interpreting
11 you right. Definitely not. We are talking about
12 maintenance and process and process, of course,
13 involves a lot of change.

14 Q. Perhaps for status quo you are
15 suggesting that I am meaning static there, I wasn't
16 speaking of static.

17 A. That was my theory, yes.

18 Q. No, status quo in terms of the
19 dynamics of the forest; in other words, the historical
20 dynamic is not maintained exactly but it has some
21 semblance of the historical status quo?

22 A. That's true, yes.

23 Q. Now, as examples of this you have
24 given us two figures, Figure 1 and Figure 2, they are
25 on page 60 and 62. 60 being the typical age-class

1 distribution of natural forest, the fire dominated?

2 A. Typical in the sense that it's
3 somewhat of an abstract representation. The real world
4 of course doesn't have equal burning each year so it
5 tends to come in pulses, so the thing is a little more
6 distorted than this, but this is the general trend,
7 yes.

8 Q. It is a schematic?

9 A. That's right.

10 Q. Actually it's Figure 3 on page 62.
11 Figure 3 is the managed forest if the objective is
12 maximum sustainable harvest?

13 A. Once again it's a schematic based on
14 the assumption that such a thing -- the same harvest
15 can be sustained, sustained over a long period of time.
16 I mean a long period of time.

17 Q. Right. And there aren't any
18 intervening natural disturbances that we can't control?

19 A. And harvest levels will change,
20 objectives will change, there is a lot of them, yes.

21 Q. But taking it as a schematic with
22 those exceptions, you are saying here are two
23 structures that we could end up with?

24 A. Yes.

25 Q. Now, accepting those qualifications,

1 obviously the age-class distribution between those two
2 are quite different?

3 A. They both contain a range of age
4 classes but if one extends further the distribution is
5 different, yes.

6 Q. But you would say that Figure 3 was
7 conservation in the way that you've used the term on
8 page 45?

9 A. Yes.

10 Q. So in this sense conservation does
11 not imply strict maintenance of the status quo?

12 A. No, Figure 3 still leaves all the
13 options open.

14 Q. Likewise, what you have shown in
15 Figure 3 is not necessarily -- or that conservation
16 does not necessarily imply either that we have an age
17 class structure that is shown on page 62?

18 A. Sorry, could you repeat that?

19 Q. Well, conversely, Figure 3 --
20 conservation does not necessarily imply either that we
21 go to an age class structure that looks like this
22 either?

23 A. No, that is really one option.

24 Q. I have added a few words to your
25 definition and I want to see if you can live with them.

1 I will read them to you.

2 A. Pardon me, definition of...?

3 Q. Conservation.

4 A. Oh, sorry.

5 Q. Does conservation in this context
6 mean that the diversity of forest species, both plants
7 and animals, is maintained and that the full benefits
8 from the forest can be sustained indefinitely?

9 MR. CASSIDY: Sorry, could you repeat
10 that, please?

11 MR. HANNA: Certainly.

12 Q. Does conservation in this context
13 mean that the diversity of forest species, both plant
14 and animal, is maintained and that the full benefit
15 from the forest can be sustained indefinitely?

16 DR. METHVEN: A. Would you define
17 diversity for me, please?

18 Q. I know you are familiar with the
19 terms richness and fullness both in terms of the number
20 of species and some sense of their relative abundance
21 and distribution?

22 A. The trouble is we don't have a
23 measure on a high proportion of these species so it
24 could be a difficult objective. We don't know what
25 they are and how much they are and what the measure is,

1 but...

2 Q. I accept all of these qualifications.
3 By the same token, given that we haven't defined it in
4 objective terms we will use it in a global term, as a
5 goal. Would you agree with that?

6 A. If you understand I have a little
7 difficulty with diversity as a goal or as an objective
8 because it's basically not measurable.

9 Q. Okay.

10 A. But if you mean do we want to
11 maintain the variety of species roughly, that's the
12 intent, yes.

13 Q. So inserting variety instead of
14 diversity, can you live with that definition?

15 A. Yes, I will accept it.

16 Q. Can we turn now to page 50 and
17 Section 8.5.1, Harvesting Systems. Specifically I am
18 looking at the second paragraph where you conclude
19 that:

20 Manipulation of the forest structure is
21 essential to achieve both timber and
22 non-timber benefits from the forest.
23 Is that a fair precis of what you are
24 saying there?

25 MR. CASSIDY: Where are we now?

1 MR. HANNA: The last full paragraph in
2 the second paragraph of Section 8.5.1 and I have
3 precised that.

4 MR. CASSIDY: No, let's read the whole --
5 what you are reading. Where is it?

6 MR. HANNA: Well, I am not reading. I
7 put it in my terms and I will read you my terms again.

8 Q. You conclude here, do you not, that
9 manipulation of the forest structure is essential to
10 achieve both timber and non-timber benefits from the
11 forest?

12 DR. METHVEN: A. Yes. In the exclusion
13 of fire, by the way.

14 Q. Yes, correct. Now, the next sentence
15 there starting with:

16 "Minimizing the adverse impacts..."

17 A. Yes.

18 Q. Can you explain the types of adverse
19 impacts that you are referring to in this sentence?
20 Just an -- not an exhaustive list, but just some
21 examples by what you mean by adverse impactss?

22 A. Occasionally there is an impact like
23 rutting, for example.

24 Q. Were there any adverse impacts that
25 you implied here in terms of non-timber values?

1 A. Adverse impacts from...? From what?

2 Q. Harvesting systems.

3 A. Adverse impacts for non-timber
4 values? Aesthetics possibly in the eyes of many
5 people.

6 Q. Now, the reason that I honed in on
7 this term minimizing is to me it immediately suggested
8 a constraint approach rather than an objective approach
9 for dealing with these types of effects. Have I read
10 something into it that shouldn't be there?

11 A. Yes, you have. I wasn't thinking in
12 terms of constraints, I was thinking in terms of
13 responsible harvesting.

14 Q. But is there not another way to look
15 at this and that is in terms of -- from a management
16 process point of view managing impacts, both positive
17 and adverse in terms of achieving an optimum flow of
18 benefits from the land base? Instead of minimizing
19 impacts, balancing and trying to reach an optimal
20 solution?

21 A. I'm sorry I can't answer that.

22 Q. Can the impacts of harvesting systems
23 not be both positive and negative with respect to, for
24 example, wildlife and recreational depending upon the
25 distribution in time and space of the harvesting and

1 related activities?

2 A. Yes, because the harvest is
3 manipulating the structure of the forest and bring back
4 many other values and benefits, yes.

5 Q. It was in that way that I interpreted
6 adverse impacts, that you can have both adverse and
7 positive impacts?

8 A. Yes, I wasn't really referring to
9 adverse really in that context that you're talking.

10 Q. But is not an essential element of
11 management the careful manipulation of the forest
12 dynamics such that negative impacts can be minimized or
13 avoided and simultaneously positive impacts can be
14 enhanced?

15 A. Yes.

16 Q. Back to one of my favorite topics.
17 Is not the setting of objectives in timber management
18 plans the formal process whereby the balancing of
19 positive and adverse impacts both within a forest
20 value, for example wildlife habitat, and among forest
21 values, for example between timber and wildlife, is
22 achieved?

23 A. I would rather not view it as
24 balancing negative and positive impacts. I would
25 rather view it as a common effort to reach a number of

1 goals.

2 MR. CASSIDY: For Mr. Hanna's benefit,
3 the way in which Industry proposes to do that will be
4 described in Panel 10.

5 MR. HANNA: I appreciate that, Mr.
6 Cassidy, unfortunately Dr. Methven will not be here.

7 Q. I would like to move now to Section
8 8.52 which is silvicultural systems. It's on page 51.
9 You indicate in that last paragraph on the page about
10 two-thirds of the way down:

11 "They..." and I believe you are referring
12 here to silvicultural systems,

13 "...can only be differentiated on the
14 basis of objectives and forest type."

15 Correct?

16 A. Correct.

17 Q. And I believe you go on in the next
18 sentence to express the view that it is a continuum of
19 opening sizes and reproduction methods and on that
20 basis -- and that, therefore, the only way to -- the
21 way to differentiate the two is based on the precise
22 management objectives in terms of the species be
23 favoured and economic reality.

24 I am just paraphrasing the next sentence.
25 It starts with:

1 "Reproduction methods represent..."

2 And you are saying there the two
3 discriminating variables between the systems --

4 A. Yes. I stand behind the sentence as
5 it is written there, yes.

6 Q. Okay. And then there are two
7 discriminating variables that you've identified,
8 precise management objectives and the economic
9 realities?

10 A. Yes.

11 Q. Can you explain to me why management
12 objectives per se, non-timber values such as wildlife
13 habitat, might not also be used in differentiating
14 among silvicultural systems?

15 A. I did not exclude them.

16 Q. So they could be included?

17 A. Certainly.

18 Q. Now, another term that I stumbled
19 over or I had difficulty with in your witness statement
20 had to deal with this concept of ecologically valid or
21 the concept of the role of ecology in defining what is
22 and is not normal, acceptable. I'm not sure of the
23 quite term. You were asked this question in an
24 interrogatory by the Ministry of Natural Resources. It
25 is interrogatory No. 5?

1 A. Yes.

2 Q. I would just like to read you the
3 first paragraph of that response and get your comment.
4 The author uses the term ecologically valid to mean
5 that:

6 "All combinations of opening sizes and
7 distributions occur in nature as a result
8 of differences in the intensity of
9 disturbance events, vegetation
10 differences, diurnal differences and
11 topographic and geographic differences.
12 No one size or distribution pattern is
13 more important than another."

14 Now, I would like to know what you mean
15 by 'more important' in that context?

16 A. Yes, I guess we should have used the
17 phrase ecologically bound.

18 Q. I think there is a basic rule that
19 you don't use what you define in the definition, but...

20 A. I guess it was used in the sense that
21 some people were suggesting certain sizes are better or
22 more important than others, so it's just to contradict
23 that view.

24 Q. Okay. You use the term better - I go
25 back to what I was saying before - better has some

1 comparative element to it, something is good and
2 something is worse?

3 A. Yes.

4 Q. I never had the concept of ecology
5 saying what was good and what was bad, perhaps you can
6 just tell me how you see that?

7 A. I agree totally.

8 Q. Well then, are you applying here by
9 'ecologically valid' anything that happens in nature is
10 ecologically valid?

11 A. That was my position, yes.

12 Q. What is the importance of something
13 being ecologically valid in terms of decisions that
14 need to be made in terms of timber management?

15 A. That is the basis from which we start
16 in all our decision-making, a full understanding of
17 landscape dynamics, we then move from that
18 understanding towards social objectives.

19 Q. But if ecologically valid is
20 something that occurs in nature, you are saying we
21 should limit ourselves in terms of the range of
22 alternatives that we consider only to those ones that
23 we know have occurred at some point in the last past?

24 A. No, I am not talking about limiting
25 anything. I am just saying we should have an

1 understanding of the basis of landscape dynamics on
2 which we are performing or interventions, that's all.

3 Q. I don't disagree with that, I think
4 we are of like mind there, I know we are.

5 What I am talking about is the sentence
6 that says:

7 "No part of the continuum is any more
8 ecologically valid."

9 It suggests that there is some sort of
10 evaluation, comparison being made. They are all, I
11 think your term was, equally important or no more
12 important, one or the other?

13 A. That is true. We may decide for some
14 production objective that society decided it wants to
15 choose a particular size of opening, for example, and
16 that's fine.

17 Q. See, my problem with that statement
18 is this: If I was standing here 10,000 years ago there
19 would be a mile and a half of ice over my head and,
20 therefore, I suppose I could argue that virtually
21 anything is ecologically valid?

22 A. You could but I wouldn't know how to
23 relate to it.

24 Q. I understand. I am trying to relate
25 to your words and what specifically is meant here:

1 "No part of the continuum is any more
2 ecologically valid."

3 A. All I'm trying to point out I guess
4 is that the processes on the landscape result in a
5 large variety of opening sizes, there is a number of
6 processes that cause this. The range of sizes is very
7 wide, that's all I was saying.

8 Q. So what you are saying from an
9 ecological point of view, you can't make an argument
10 for one size of an opening or another because the
11 forest has experienced them all?

12 A. Yes, except you have to take other
13 things into consideration.

14 Q. Economics and...

15 A. No, ecology. Even though small
16 openings occur in the boreal forest because of certain
17 forces, the boreal forest requires large openings in
18 order to renew itself.

19 Q. Okay. I would like then to move to
20 8.5.2.2 which deals specifically with that issue; and
21 that is, size of clearcut. And if you could look
22 perhaps on page 54, I'm looking at the first full
23 paragraph, little past halfway down, the sentence that
24 starts:

25 "Ecological1, therefore, there is no

1 limit to the size of a clearcut that can
2 included within a perimeter as long as a
3 minimal amount of cover is retained."

4 Now, using ecological here is similar to
5 how we just discussed in terms of ecologically valid,
6 you are meaning the same thing?

7 A. Yes.

8 Q. Now, you indicated there isn't a
9 limit on the upper side, you can go as big as you want?

10 A. That's right.

11 Q. You did indicate just a minute ago
12 that there is a limit on the other side, there is a
13 limit as to how small you can go?

14 A. That depends on the system you're
15 working with.

16 Q. Let's deal with the boreal forest.

17 A. Yes.

18 Q. How small can you go?

19 A. As long as it provides both light and
20 water and nutrients for the regeneration of species so
21 that they will germinate, survive and grow.

22 Q. Based on your experience, and I think
23 you have already given an interrogatory response to
24 this, the orientation of the edge of the cut may effect
25 those sorts of things and whatever, but can you just

1 give us an idea what you would see as a minimal size?

2 Are we talking about 10 hectares, 10,000 hectares?

3 A. The minimal size for what?

4 Q. To be ecologically consistent in the
5 terms that you've used?

6 A. If we are going to talk about total
7 landscape dynamics, most of the openings that are made
8 on the landscapes were very large openings.

9 Q. No, but I didn't ask you that.

10 A. So if we are talking -- you can have
11 a 10-hectare opening if you wish, but if you are asking
12 should the whole landscape be covered with 10 hectare
13 openings, then I would have to say that would not be in
14 accordance with traditional landscape dynamics.

15 Q. Right. But that is not to say that
16 that's bad?

17 A. I didn't say it was bad.

18 Q. No. So even though it isn't what we
19 have seen historically, and this comes back to
20 conservation, it may not represent what we've seen
21 historically, it may be the desired and most beneficial
22 structure in a planning process?

23 A. If the planning process came to the
24 decision that this was an objective, yes.

25 Q. Now, I am back to what ecology has to

1 do with that decision. Is there an ecologically
2 defined minimum, as you've used the term here, to
3 clearcut size?

4 Is there some fundamentally ecological
5 principle that says: Look, I can't have a clearcut any
6 smaller than 5 hectares, 10 hectares, 1,000 hectares?
7 I am open to you if you have a view on that.

8 A. All big sizes is a continuum and I 'am
9 not going to sort of cut off at any point across that
10 continuum. My whole point is it's a continuum.

11 Q. Now, in your discussion of fire
12 ecology, you make reference to the presence of
13 stringers and islands often remaining after fires;
14 correct?

15 A. Correct.

16 Q. And those are live trees; is that
17 correct?

18 A. That is correct.

19 Q. Now, I didn't see in your discussion
20 any reference made to the fact that there are in
21 addition to live standing trees and stringers and
22 islands after a fire, dead standing trees also.

23 A. All of the trees after a fire remain
24 standing, yes.

25 Q. And these dead standing trees often

1 serve an important wildlife function?

2 A. I am not qualified as a wildlife
3 expert so it would be difficult for me to answer that
4 one.

5 Q. Is it not a fact though that residual
6 standing trees are often tramped as part of site
7 preparation?

8 A. Yes. I don't know whether the right
9 word is often, but it is done, yes.

10 Q. And then from a wildlife perspective,
11 accepting for the time being that these residual trees
12 may play a significant role in terms of wildlife, is
13 this not another significant difference between fire
14 and timber management; fire has these residual stands
15 of dead trees, dead snags, whereas in timber management
16 often those dead snags are purposely removed?

17 A. Well, I never said -- or I don't
18 think anywhere here did I state that fire and timber
19 management were identical. There are differences, yes.

20 Q. Well, I got the sense in reading your
21 witness statement that you felt they were reasonably
22 analogous?

23 A. As the closest approximation we can
24 come to in fire exclusion, in my opinion.

25 Q. If our intention was to replicate the

1 components of fire that are important in terms of
2 forest dynamics - and I am including there wildlife
3 populations in addition to tree populations - one way
4 to increase the similarity of the two effects would be
5 to provide a residual dead standing structure to the
6 site after harvest?

7 A. These are the issues that would
8 certainly come up in the planning process, they would
9 be resolved there and subsequent actions will take care
10 of it, yes.

11 Q. And that would be more comparable to
12 what you would see in a forest fire in many cases?

13 A. There are islands and stringers left
14 after forest fires, there are also islands and
15 stringers left after harvesting operations in many
16 cases.

17 Q. I wasn't referring, Dr. Methven, to
18 islands and stringers now, I was referring to residual
19 standing trunks outside of the surviving stringers and
20 islands.

21 A. I am trying to think of this in an
22 implementable -- just, you mean a partial cutting
23 rather than a clearcutting?

24 Q. Well, the Board has seen on both site
25 visits and through many photographs presented that

1 often there are residual trees left after harvesting
2 activity, often they are hardwood species.

3 A. That's true.

4 Q. And if we were to attempt to
5 replicate the forest structure after a fire, at least
6 some fires, we could better replicate it with timber
7 harvesting if you left some of those residual trees?

8 A. I think we are talking about a
9 different structure here, you are talking about
10 scattered individual hardwoods within that fire,
11 because that is not the way it works.

12 Q. No, no, I am talking about dead. In
13 the fire -- maybe we're just better to be sure. What
14 does it look like in a fire, a medium intensity fire
15 after the fire has gone through, are there dead
16 standing trunks scattered throughout the fire area
17 normally?

18 A. Yes.

19 Q. After you have harvested, clearcut
20 harvest in a moderately mixed wood stand when you are
21 simply going for softwoods, are often these scattered
22 interspersed residual trees?

23 A. Live trees.

24 Q. And we have heard evidence that those
25 trees often die and there is actually -- I haven't got

1 the terminology here but the foresters developed a
2 syndrome for it, I recall in Panel 10 or 11.

3 A. You have to identify the species.

4 Q. Birch I think was one.

5 A. Yes, but not aspen.

6 Q. Let's deal with birch. You left the
7 birch, would we have something that is more comparable
8 to a forest fire once we have finished than if we tramp
9 those trees down?

10 A. If the wildlife biologist and
11 managers came forward with a good reason for leaving
12 those birch for wildlife habitat concerns that would be
13 discussed in the planning process, and if the reason
14 came to that the tradeoffs in terms of extra costs of
15 site preparation and renewal were worth the wildlife
16 habitat values, then that would be done, yes.

17 Q. I like the sound of that, I don't
18 disagree with it at all, that is what I am hoping will
19 happen too, but I am just asking you from an ecological
20 point of view would that be more comparable to what you
21 would expect in a natural fire from a structural point
22 of view?

23 A. Yes, I suppose it would in the sense
24 they are standing dead stems.

25 Q. Back to page 54. In the first full

1 paragraph there, the next sentence says:

2 "This...", and I believe you are
3 referring here to replicating these stringers and
4 islands in the timber management process?

5 A. Yes.

6 Q. "This is not always easy to
7 accomplish because of the susceptibility
8 of residual trees to blowdown."

9 Now, you say it is not always easy to
10 accomplish. There are cases -- there are situations
11 though where it can be accomplished?

12 A. Yes.

13 Q. Are you familiar with quantitative
14 methods to predict the extent of blowdown?

15 A. Yes, there have been some published,
16 at least I know of one.

17 Q. I am not planning to go through it
18 but I have one here, one of many that I have Wind in
19 the Forests of Southeast Alaska and Guides for Reducing
20 Damage. I think there is probably 60 articles
21 referenced in terms of wind damage, wind susceptibility
22 and ways to deal with blowdown effects.

23 A. When I said one, I am sorry, I was
24 referring to Ontario.

25 Q. What is the one for Ontario? I would

1 be interested in that.

2 A. I don't have it in my head right now,
3 I am sorry.

4 MR. HANNA: Madam Chair, I am not asking
5 the witness to recall at this point but I would be very
6 interested in that article if it's at all possible for
7 him to provide me with that reference.

8 I am not asking for the article itself
9 but just if the witness could at some time in the
10 future provide me with that reference, because it would
11 be very useful, because that is a critical issue in
12 terms of whether it's practical to leave residual
13 stands of timber for non-timber values.

14 MR. CASSIDY: Well, are you going to be
15 able to identify that article fairly easily? I don't
16 want to have you running around.

17 MR. METHVEN: Well, I don't have it in my
18 personal library, but I do know I just have a
19 recollection, having run across it at some point.

20 MR. CASSIDY: All we can do is ask the
21 witness subsequent to this evidence to see if he can
22 make further efforts to recollect - no guarantees, no
23 undertaking - he will just make his efforts to see what
24 he can come up with, and he will inform me and, if he
25 comes up with that reference, we will provide it to Mr.

1 Hanna.

2 MR. HANNA: Madam Chair, I simply ask an
3 undertaking for his best efforts and if he doesn't come
4 up with anything that's fine, just so we have it
5 formally on the record.

6 I accept Mr. Cassidy's point and he may
7 not be able to come up with it, but if he can, I would
8 very much appreciate it.

9 MR. CASSIDY: That's fine.

10 MR. HANNA: Q. I take it though you have
11 some knowledge of the dynamics of blowdown?

12 DR. METHVEN: A. Some.

13 Q. Is blowdown not more likely when the
14 size of the residual stands is small and the clearcut
15 size is large, all other factors being equal?

16 A. I am sorry, I am having difficulty
17 visualizing the scene here. Are you saying --

18 Q. Okay. As the residual stand of trees
19 gets smaller and as the clearcut gets larger, the
20 amount of exposure of the stands to wind, is not
21 blowdown more likely?

22 A. Blowdown is more likely as the
23 residual stand gets smaller as long as it's not
24 occupying a low point in the topography, for example.

25 Q. Correct. And the amount of exposure

1 to wind as the clearcut gets larger, the potential for
2 blowdown increases?

3 A. There is not a linear relationship
4 between size of clearcut and that problem, no.

5 Q. Okay, accepting that there isn't a
6 linear relationship, accepting that there is a
7 non-linear relationship.

8 A. I won't even accept that there is a
9 non-linear continually increasing relationship.

10 Q. Well, perhaps for my benefit you can
11 explain to me what you mean by that. I am not sure I
12 follow.

13 A. There is some point in the size of
14 clearcut where it doesn't matter how big it is, it is
15 not going to change.

16 Q. Okay. So there is a threshold beyond
17 which larger doesn't make any difference?

18 A. Right.

19 Q. Now, are you not faced with the
20 problem of blowdown no matter whether you have residual
21 stands or trees in a clearcut or along the perimeter of
22 a clearcut. I think blowdown is a fact of life once
23 you break up a stand; is that not true?

24 A. We just said that the size of stand
25 is an important part of how much blowdown you get. You

1 are talking about the perimeter of a clearcut, then you
2 are talking about an adjacent stand is large and the
3 amount of damage is going to be less because the wind
4 will be greatly impeded in terms of its movement.

5 Q. Right. But if we took the amount of
6 timber lost in absolute terms and compared the amount
7 of timber we would lose in absolute terms along the
8 perimeter compared to a small residual stand of trees,
9 the difference may be -- you may well lose much more
10 blowdown around the perimeter of your clearcut
11 depending upon the shape and length?

12 A. I am not quite sure about that.

13 Q. Okay. Can residual stands be
14 designed in terms of wind direction, topography,
15 species composition and age and shape to minimize
16 blowdown?

17 A. They can be, yes.

18 Q. Now, in terms of the extent -- the
19 significance of the concern that you have raised here
20 on page 54, what studies have you done or aware have to
21 quantify the extent of this problem?

22 A. Of blowdown?

23 Q. And blowdown specifically with
24 respect to the provision of stringers and islands of
25 residual timber for non-timber values, I am talking

1 about managed stringers and islands now?

2 A. You mean specifically left stringers
3 and islands within a clearcut?

4 Q. Yes, for non-timber values.

5 A. For non-timber values. I have got no
6 experience in doing that, no.

7 Q. Are you aware of any attempts to
8 quantify the extent of this problem?

9 A. The problem being the blowdown?

10 Q. Amount of blowdown, the cost in terms
11 of timber loss?

12 A. No, there's no -- just on blowdown of
13 strip cutting for example.

14 Q. I am sorry?

15 A. Most of the evidence that I am aware
16 of deals with blowdown from strip cutting as opposed to
17 blowdown from stringers and islands.

18 Q. And blowdown from strip cutting, you
19 are talking about strip cutting as a silvicultural
20 procedure for regeneration?

21 A. As a silvicultural procedure, yes.

22 Q. Is it your view that there is
23 sufficient rationalization in terms of timber loss due
24 to blowdown to argue against the leaving of residual
25 stands for purposes other than timber in all cases?

1 A. This is an issue that will be
2 discussed in the planning process and I am not sure
3 what you expect me to say here.

4 Q. Well, if you had compelling evidence
5 that said: Every time you leave a residual stand of
6 tree they all get blown down, they don't serve any
7 purpose for wildlife, we just lose that timber, it's a
8 waste of time in all cases, then I think that you can
9 agree and come forward with me with that sort of
10 information that that would be very compelling to this
11 Board to say: Look, you shouldn't waste your time with
12 that.

13 A. I wouldn't agree with coming forward
14 with a statement like that.

15 Q. So there are cases where it well may
16 be practical in terms of the amount of wood loss and
17 the achievement of those non-timber objectives to leave
18 these residual stands?

19 A. Are we talking residual stands or
20 small areas within a cut-over?

21 Q. I am sorry, perhaps I am not sure
22 what you --

23 A. Well, we are always leaving -- I mean
24 there are always residual stands.

25 Q. No, no, I am talking now about

1 stringers and islands--

2 A. Yes.

3 Q. --that type of a concept within a
4 clearcut?

5 A. Thank you. They can be left in
6 certain areas that are topographically protected, for
7 example, and they wouldn't blow down probably.

8 Q. Yes. I am looking now on page 54 at
9 the last paragraph, and I believe it's about midway
10 through that paragraph, the sentence starts with:

11 "For example, the limitation on size of
12 clearcuts is usually applied as a
13 constraint..."

14 I just wanted to stop there, this concept
15 of constraint. Now, when you use the term constraint
16 here - and I believe you continue on to talk about
17 wildlife habitat - are you referring to the use of
18 constraint management approaches such as Moose Habitat
19 Guidelines; is that what you mean by constraint?

20 A. Yes.

21 Q. Would you prefer, rather than dealing
22 with wildlife habitat as a constraint, to deal with it
23 instead as an objective, as an integral part of the
24 timber management planning system?

25 A. Yes, but we are at the moment a

1 little bit inhibited in terms of our knowledge of the
2 population dynamics.

3 Q. I will be coming to that. Now, if
4 wildlife habitat objectives are set for an FMU, a
5 forest management unit, does this not remove the need
6 for constraints on clearcut sizes, at least with
7 respect to wildlife concerns?

8 A. It may.

9 Q. Depending how the habitat
10 requirements are specified?

11 A. That's right.

12 Q. Now, in the next sentence there you
13 indicate that:

14 "... the wildlife habitat criteria are
15 often based on feelings and anecdotal
16 evidence, rather than hard facts
17 concerning relationships between habitat
18 structure and population dynamics."

19 Right?

20 A. Yes.

21 Q. Are you suggesting that you would
22 prefer to see explicit quantitative cause/effect
23 relationships between wildlife habitat and their
24 populations?

25 A. Definitely.

1 Q. And would you prefer to see these
2 relationships used to develop wildlife habitat
3 prescriptions rather than relying on narrow anecdotal
4 interpretations of habitat guidelines like those for
5 moose?

6 A. Yes, the current guidelines I would
7 regard as an interim measure to solve the problem of
8 our ignorance about some of these things, yes.

9 Q. Okay. But is it not true that we
10 always have limited information and knowledge in terms
11 of relationships between wildlife populations and
12 habitat, this problem is not a new one, it's one that
13 has been around for - I hesitate to say - centuries?

14 A. And we will always have limited
15 knowledge of the systems we are trying to deal with,
16 but -- sorry.

17 Q. Sorry?

18 A. I am saying it can be better than it
19 is at the moment, though.

20 Q. And we could have better knowledge in
21 terms of regeneration, forest dynamics, vegetation
22 succession, there is an endless number of factors and
23 environmental affairs that we would like to have better
24 knowledge on; is that not correct?

25 A. That is correct, but probably the

1 most difficult one we are facing at the moment is that
2 habitat population dynamics connection.

3 Q. Well, I can tell you many -- well,
4 there's biologists probably would argue with that, but
5 I would ask you this: Is it your view that despite
6 these limitations, the limitations of our knowledge, it
7 is better to lay out in explicit quantitative terms
8 what we do know and to move forward on that basis and
9 learn by our errors over time?

10 A. That is part of the adaptive
11 management process, yes.

12 Q. I take it that you endorse that
13 philosophy?

14 A. Yes.

15 Q. I would like now to look at the last
16 sentence on that page, page 54, which says:

17 "However, the important point is that the
18 perceived benefits associated with
19 smaller clearcuts are also associated
20 with environmental costs."

21 Do you see that?

22 A. Yes.

23 Q. What do you mean by smaller clearcuts
24 in this context, smaller than what?

25 A. I am just saying that the smaller

1 they get the more roads you will have to put in, for
2 example, to access a given volume of timber within a
3 given time.

4 Q. And continuing on to page 55, you
5 mention the fact that you need a more intense road
6 network, and you also say:

7 "...the exploitation of a larger area
8 within a given time for a given volume of
9 wood."

10 What do you mean by exploitation here?

11 A. It's just a word for use.

12 Q. Is it meant to have a negative
13 connotation?

14 A. No.

15 Q. Is it not true that once a forest
16 management unit is in a managed state that the
17 exploitation area is the same?

18 A. I couldn't say yes to that
19 categorically because it would depend on the volume
20 delivered per hectare of management forest as against
21 the volume delivered in the pre-managed forest.

22 Q. Well, let's bring it back to your
23 statement here. You're saying smaller cuts will
24 require exploitation of a larger area?

25 A. Within a given time frame.

1 Q. What is that given time frame that
2 you are referring to here?

3 A. You can make it a year.

4 Q. But in any one year in the managed
5 state we cut the - ideally, I recognize there are other
6 factors - but ideally, we cut the same amount of timber
7 every year, that is sustained yield. I understand
8 there is mill demands and changes and that sort of
9 thing, but...

10 A. Given those provisos, yes.

11 Q. So I don't see how the exploitation
12 area gets larger. It seems to me it's the same
13 regardless of the size of the clearcut; it has to do
14 with the size of the management unit and the
15 productivity of the management unit. That is what
16 determines the exploitation; is it not?

17 A. In any single year's harvest we need
18 a certain volume, so within a given area there is going
19 to be lot of or more left, so to speak.

20 Q. I am sorry, I didn't understand that
21 last bit that you just told me.

22 A. We can get that given volume of wood
23 from a smaller area.

24 Q. With more intensive management?

25 A. That too, yes.

1 Q. That too. I am sorry, I didn't
2 understand you again.

3 A. Those smaller cuts will be
4 distributed over a wider area presumably.

5 Q. Oh I accept that, but the
6 exploitation area even though it's distributed more
7 broadly over the management unit is still the same?

8 A. I didn't use the exploitation area,
9 you are referring to the forest management unit will be
10 the same size, yes. I am talking about how much you
11 access within a given year, for example.

12 Q. I am sorry, maybe I don't -- I am
13 confused here. You say here smaller cuts require
14 exploitation of a larger area within a given time. I
15 will accept that as one year.

16 A. Within the forest management unit,
17 yes. It's the total or the gross area harvested as
18 against the net area that is harvested.

19 Q. Can you tell me what the difference
20 between the gross area harvested and the net area
21 harvested. What is the gross area harvested?

22 A. It's the area from which the harvest
23 is obtained.

24 Q. What is the net area harvested?

25 A. That is just the harvest area and

1 that will vary depending on the size of the cut blocks
2 that you are using.

3 Q. Okay. And how do you -- this is a
4 new term to me, this gross area harvested. I had
5 always had the concept of, when you are harvested you
6 drew a line and you either took out a few trees or you
7 had a clearcut and identified an area you were going to
8 cut and that was the harvest area.

9 Now, what is -- that is the net harvest
10 area. What is the gross harvest area? I don't
11 understand that term, it's a new one for me.

12 A. I am having trouble explaining it
13 any...

14 MADAM CHAIR: Could we use an example,
15 Dr. Methven. I thought this was a simple concept, and
16 let me see if my explanation can add anything to this.

17 DR. METHVEN: Thank you, Madam Chair.

18 MADAM CHAIR: And that is, if you have a
19 hundred hectare area -- an area of a hundred hectares
20 and you are doing clearcut on 100 hectares, then that
21 volume of material is taken off, but if you still want
22 a hundred hectares volume of material but you want to
23 have smaller clearcuts in it, then you have to expand
24 into a larger area, maybe a 200-hectare area, in order
25 to take the same volume of timber off because you have

1 to separate the clearcuts.

2 DR. METHVEN: Thank you, Madam Chair,
3 that is my meaning.

4 MR. HANNA: Q. I guess my concern with
5 that concept then is: How do you define what is the
6 gross harvested area?

7 You see what I am getting at, like when
8 it's -- let's take the example Madam Chair has just given
9 you. You have got a hundred hectare cut, instead of
10 having a hundred hectare cut you have two 50 cuts; one
11 over in the northwest corner of the forest management
12 unit and one over in the northeast corner of the forest
13 management unit, now what is the gross harvested area
14 in that case?

15 DR. METHVEN: A. That's the total area
16 that you are going over to get that harvest and you
17 need to traverse it and access it with roads.

18 Q. The light is starting to shine. So
19 what you are saying in terms of the larger area, that
20 you are talking about not only the area harvested but
21 the land lost to roads?

22 A. The intervening area that you have to
23 traverse and it's included in that.

24 Q. Okay. Now, let's go to the managed
25 forest state where our access system is in place, we

1 are into our second, third rotation of the forest; does
2 this statement still stand?

3 A. I am not sure what you finally mean
4 by the managed forest. I doubt if everything will be
5 ever be finally in place and we are always making
6 adjustments.

7 Q. I accept that. What I am saying is,
8 let's say we are into our third rotation cut, does your
9 comment here about the exploitation area still apply,
10 seeing we have already got in place a road network,
11 those things are a fait accompli?

12 A. Barring all other problems and
13 unforeseen events, there is a probability that, yes, it
14 will be less. You are talking about 180 years into the
15 future, of course.

16 Q. I appreciate the difficulties and I
17 think the Board does too. Now, you make the -- in the
18 last clause of that sentence you say:

19 "Smaller clearcuts represent a scale
20 disturbance that may not be compatible
21 with the environment in which they
22 occur."

23 What do you mean 'compatible with the
24 environment'?

25 A. This is part of my statement about

1 landscape ecology dynamics that is dominated by large
2 scale openings.

3 Q. So would another way to say it, it
4 would not be analogous with the historical pattern?

5 A. That would be acceptable, yes.

6 Q. The next sentences says that the cost
7 of wood will rise and I understand that means as a
8 result of smaller clearcuts.

9 Do you have any quantitative indication
10 of what the relationship between the size of clearcut
11 and the cost of wood looks like? Is it linear,
12 non-linear, is there a threshold?

13 A. I would prefer if possible to pass
14 that to one of my colleagues.

15 Q. Fine. Mr. Roll or any of the others?

16 MR. HOPKINS: A. Well, I explained
17 yesterday to the Board, constraint on cut patterns, I
18 was talking in the context of narrow strips of a
19 hundred foot wide. There are several operational
20 difficulties involved with that, including additional
21 road construction and maintenance and operational
22 difficulties, production in strip difficulties and
23 losses due to blowdown.

24 Q. Mr. Hopkins, I wasn't suggesting that
25 there aren't some costs, I am trying to get some idea

1 of the relationship over the full range of options that
2 might be available; in other words, going from a 10,000
3 hectare clearcut down to a 10 hectare clearcuts.

4 Is there some idea -- is it a straight
5 linear function, is there a break point? Can you give
6 me some idea what the cost implications look like?

7 A. I have no idea. They're just simply
8 the relationships I described. As you make your
9 clearcuts smaller and you expand the area over which
10 you are operating, these all tend to provide
11 difficulties which will result in some cost, but I
12 would have no idea of what exactly those costs would
13 be.

14 MR. CASSIDY: If I may be able to assist
15 Mr. Hanna, I don't believe the Anglers and Hunters
16 cross-examined in respect of Panel 2 but there was
17 evidence led in there -- in that panel in respect of
18 wood costs associated with reserves and that may be of
19 some assistance to you, Mr. Hanna, if you wish to
20 review it. I think there were a couple of exhibits
21 actually entered during the course of our Panel 2.

22 I offer that just by way of assistance
23 for him because we have some ways to go in the hearing
24 and he may wish to review that.

25 MR. HANNA: Thank you, Mr. Cassidy. I,

1 in fact, was aware of that, but I do appreciate your
2 assistance. My understanding of that evidence was it
3 said: Here are the costs of a reserve in terms of wood
4 and operational costs for specific cases, but not
5 looking at it over a full spectrum of the
6 circumstances.

7 MR. CASSIDY: You are right, it was in
8 respect of particular circumstances because otherwise
9 you would have a study that would go on for a number of
10 years, I suspect, over the whole area of the
11 undertaking, but it was an attempt to provide at least
12 some idea for the benefit of the Board and parties like
13 Mr. Hanna.

14 MR. HANNA: Thank you.

15 Q. Dr. Methven, back to you. This
16 paragraph -- or the last part of this paragraph, the
17 top of page 55 has described some many of the drawbacks
18 of smaller clearcuts, but are there not also benefits,
19 timber benefits to smaller clearcuts in terms of, for
20 example, one, pest management?

21 DR. METHVEN: A. I'm not an entomologist
22 and not qualified as such and I'm not sure that I could
23 answer that, but I have no -- I can't think of how that
24 would benefit pest management particularly.

25 Q. Well, let me give you an example.

1 You are familiar with forest dynamics. If you have
2 smaller stands dispersed throughout the boreal forest,
3 the potential for dispersion and development of major
4 pest outbreaks may be reduced simply because of the
5 lack of homogeneous extensive areas in which a pest
6 infestation might flourish; is that not correct?

7 A. I wouldn't think so, no. It's really
8 a question of distribution of age classes that I think
9 you are talking about and regardless, you would still
10 have that distribution of age classes.

11 Q. I'm sorry, I didn't understand that
12 answer. Distribution temporally, spacially?

13 A. Many pest epidemics are associated
14 with a very poor age-class distribution in large areas
15 and older mature age classes. This is not a question
16 of the size of the cuts, it's a question of the
17 distribution of age classes within the forest.

18 Q. I accept what you're saying, that
19 large areas of often older stands with certain species
20 composition, for example spruce budworm, tend to be
21 more susceptible and that is very well documented I
22 think in the literature; correct?

23 A. Yes.

24 Q. But if you have a large number of
25 small stands instead of one large stand, a small number

1 of small stands is that not one way -- in fact, is that
2 not part of what is now commonly used in the forestry
3 literature as part of the integrated pest management?

4 Is that not one of the elements, actually
5 manipulation of the spacial distribution of stands?

6 A. No, it's manipulation of spacial
7 distribution of age classes.

8 Q. I must admit my terminology is
9 failing me here. What is the difference between an age
10 class and a stand? I should know by this point in the
11 hearing, but obviously I don't.

12 A. They can be different or may not be.
13 You can have a single species with two age classes and
14 there would probably be two stands at an even-aged
15 structure, or it could be stands of two different
16 species.

17 Are you referring to small stands of
18 different species or small stands of different ages?

19 Q. I was referring to both. I was
20 referring to increasing the - I hate to use the word
21 diversity - mosaic of stands within the forest both in
22 terms of species, age class and any other factor that I
23 might think of. Is that not part of what is now termed
24 integrated pest management?

25 A. We are manipulating obviously the age

1 classes. In terms of species, we have a limited set to
2 work with within the boreal forest.

3 Q. And one of the elements in terms of
4 manipulating age classes and species to the extent that
5 we have some room to move there, is both in terms of
6 their temporal profile and spacial profile within the
7 forest?

8 A. I'm sorry, I missed that.

9 Q. Okay. You are saying in integrated
10 pest management we -- there is consideration now at
11 this time in terms of trying to manipulate the forest
12 structure and the manipulation of forest structure
13 refers to distribution of age classes, distribution
14 temporally, the species composition to the extent that
15 we can manipulate that and the spacial distribution of
16 the age classes and species on the land base; is that
17 not correct?

18 A. I still would hold that the size of
19 clearcuts really is the not issue here or the size of
20 the stands is not the issue here. It's the species and
21 the age classes that is the issue.

22 Q. We have a single species over a large
23 area in one age class, particularly an older age class,
24 is that more susceptible to pest infestation than if we
25 had a large interspersed of age classes?

1 A. On the land we are going to have a
2 large interspersion of age classes, it is just that
3 they will be in bigger pieces and that doesn't
4 necessarily make them more susceptible.

5 Q. Are there timber benefits in terms of
6 smaller clearcuts and also in terms of a more
7 extensive -- or more intensive network of roads in
8 terms of forest fire protection?

9 A. Forest fire protection?

10 Q. Yes.

11 A. Really what we are talking about here
12 is forest fire detection and initial attack, I presume.

13 Q. Protection.

14 A. Yes, I know but these are the
15 components of protection. Detection is an aircraft
16 booming business, so whether you have roads or not it
17 doesn't matter. The initial attack is a helicopter to
18 assist the situation. Whether you have roads or not it
19 doesn't matter either.

20 Q. Okay. But there is more to it than
21 initial attack and detection?

22 A. If the initial attack should fail,
23 then you have to move in more forces.

24 Q. And there is also the danger of
25 having, for example, small stands of an old age classes

1 with perhaps high fuel content and young regenerating
2 willing stands with low fuel content in terms of the
3 spread of the fire; is not correct?

4 A. We'd have to specify now the fire
5 regulations, codes and indexes in terms of determining
6 the answer to that one.

7 Q. I don't disagree with you, but can
8 you accept that as a general proposition?

9 A. No, I cannot. Young stands of jack
10 pine, for example, have a continuous fuel in the
11 surface to the top, they are extremely flammable and
12 burn very rapidly; whereas more mature stands have a
13 break in the fuel continuity from the surface to the
14 crown. So the conditions under which the fire occurs
15 is very important in terms of making a judgment.

16 Q. Okay. Let's take -- what kind of a
17 fire would the small regenerating jack pine be most
18 susceptible to and the more mature jack pine be less
19 susceptible to?

20 A. Kind of fire in terms of...?

21 Q. You're the fire expert.
22 Whether index, I don't know. Tell me the factors that
23 you want. You just give me an example. Tell me what
24 kind of fire would the young regenerating stands be
25 more susceptible to?

1 A. Under relatively low hazardous
2 conditions, if you have a fire starting in a young jack
3 pine stand it will very rapidly become crown burn,
4 under the same conditions in the mature stand it will
5 not.

6 Q. Okay. Now we have a low hazardous
7 fire and we have got --

8 A. I said relatively low hazardous.

9 Q. Relatively low hazardous fire, we
10 have got a 10,000-hectare area of regenerating jack
11 pine, then we've got the same area but it has a high
12 interspersion, mature stands, to make it even better we
13 will put them in wind break, put them in a fire break,
14 wide enough that the fire can't jump it.

15 Which, from a fire control point of view,
16 is going to be easier to control?

17 A. It depends which way you're moving.
18 You're going to have a lot -- you say very small
19 stands.

20 Q. I beg your pardon?

21 A. You are proposing very small stands
22 so you're going to have a lot of high hardwood stands
23 and a lot of less hardwood stands.

24 Q. Sure.

25 A. I'm sorry, I'm not following your

1 point here.

2 MADAM CHAIR: Mr. Hanna, would you like
3 us to have the morning break now? Is this is a good
4 time?

5 MR. CASSIDY: Is this a good time for a
6 fire break?

7 MR. HANNA: This is fine, Madam Chair.

8 MADAM CHAIR: All right. We will be back
9 in 20 minutes then.

10 ---Recess taken at 9:45 a.m.

11 ---On resuming at 10:10 a.m.

12 MADAM CHAIR: Please be seated.

13 MR. FREIDIN: Madam Chair, if I just
14 might ask one question of clarification in relation to
15 the ruling that was just issued in relation to
16 satellite hearings.

17 I am assuming that at all of the
18 locations for satellite hearings which are identified
19 on page 3 and 4, these are the satellite hearings which
20 are scheduled--

21 MADAM CHAIR: Yes.

22 MR. FREIDIN: --that on all of these
23 locations except Toronto people who are both in
24 favour -- or in support and in opposition will be
25 coming forward, but the scheduling of a hearing in

1 Toronto for the two days in August is only for the
2 Ontario Professional Foresters Association, it is not
3 going to be the full satellite hearing for Toronto?

4 MADAM CHAIR: That's correct.

5 MR. FREIDIN: Thank you.

6 MR. CASSIDY: I have a question of
7 clarification as well with respect to page 4 where you
8 indicate that the Board direct Forests for Tomorrow to
9 submit on May 15th the number of lay witnesses and the
10 subject matter of their evidence and then you state
11 that the Board will then determine if written
12 statements are required for these witnesses.

13 My clear understanding, at least I
14 thought it was clear, was that Forests for Tomorrow had
15 agreed to do that in any event with respect to each of
16 their lay witnesses and I can indicate that was my
17 understanding as result of discussions I had with
18 counsel and which I thought Ms. Swenarchuk put on the
19 record yesterday.

20 MADAM CHAIR: Yes. I wasn't clear, I
21 should have asked Ms. Swenarchuk exactly what she
22 meant. I wasn't sure she admitted lay witnesses or not
23 in that summary of the evidence that she was going to
24 be...

25 MR. CASSIDY: Well, my understanding, and

1 I believe it is the understanding of Ms. Murphy and Ms.
2 Seaborn, was that there will obviously be witness
3 statements provided for the experts and Ms. Swenarchuk
4 had agreed as a result of the discussions that we had
5 amongst counsel to also provide witness statements in
6 some form that would adequately disclose their
7 evidence.

8 MADAM CHAIR: That wasn't clear to me
9 yesterday in what was reported to the Board.

10 MR. CASSIDY: All right. Then perhaps --

11 MADAM CHAIR: And if that is the case, I
12 will ask Ms. Swenarchuk to respond to that directive in
13 the ruling.

14 MR. CASSIDY: Fine. That's fine then,
15 Madam Chair. Perhaps we can deal with it the next time
16 Ms. Swenarchuk is before the Board.

17 MS. SEABORN: Just on that issue, Madam
18 Chair. I think there was, though, some issue as to
19 whether those witness statements with respect to the
20 lay witnesses would be subject to statements of issues
21 and the interrogatory process and I think -- my
22 understanding from our conversation was that Ms.
23 Swenarchuk may have some submissions to make in regard
24 to those witness statements being treated somewhat
25 differently for those purposes.

1 MADAM CHAIR: That's fine. I think we
2 are covering that ground anyway and we have time to
3 sort this out in the week of May the 1st.

4 MR. CASSIDY: Thank you.

5 MR. HANNA: Q. Dr. Methven, before the
6 break I was suggesting to you that there were a
7 possible number of benefits in terms of timber
8 production to smaller clearcuts, we discussed pest
9 management, forest fire protection.

10 I would like now to ask you if there are
11 not benefits in some circumstances in terms of renewal
12 in particular in terms of the use of natural seeding
13 by having smaller clearcuts? In fact, is that not the
14 concept behind strip cutting?

15 DR. METHVEN: A. It is the concept
16 behind strip cuts, but I will not agree that it
17 necessarily will work better on smaller clearcuts. You
18 will have to be more specific with the species you are
19 referring to.

20 Q. Well, is a strip cut a clearcut in
21 your terminology?

22 A. It may or may not be.

23 Q. So if I understand what you are
24 saying, depending upon the configuration of the smaller
25 clearcut and the distance between the edge and the

1 length of edge, that would determine how effective it
2 might be in terms of renewal?

3 A. There are many factors that go into
4 the success of renewal, that is one.

5 Q. Now, lastly, are there not cases,
6 many cases in fact where there would be timber benefits
7 to the smaller clearcuts because, as you've already
8 pointed out in your witness statement, there will be
9 increased access and, therefore, you could increase
10 access for activities such as tending?

11 A. If tending is part of the program,
12 that will be accomplished with large clearcuts or small
13 clearcuts.

14 Q. Is there also a benefit in terms of -
15 perhaps Mr. Roll you are the person to answer this
16 question - potential benefit in terms of providing
17 greater flexibility to meeting wood demand at mills
18 because you have got a greater proportion of the forest
19 management units accessed at any time and the greater
20 diversity of stand types and species available to you?

21 MR. ROLL: A. Yes, that could be a
22 benefit.

23 Q. Dr. Methven, I would like to go back
24 to your witness statement, the second point that you
25 make there on page 55 in the last sentences in terms of

1 the cost, a potential environmental cost of smaller
2 cuts and you indicate:

3 "Erosion from roads and stream crossings
4 is liable to increase."

5 Do you see that?

6 DR. METHVEN: A. Yes.

7 Q. It is not also possible that the
8 erosion may decrease?

9 A. As a result of...?

10 Q. Smaller clearcuts.

11 A. I don't know why. We're not talking
12 about erosion.

13 Q. Is not erosion often a major concern
14 in the abandonment of roads where maintenance is not
15 practised?

16 A. That has nothing to do the size of
17 the cut.

18 Q. Well, perhaps I misunderstood what
19 you said. Your first sentence there says:

20 "Smaller cuts require a more intensive
21 network of roads."

22 My understanding is, therefore, that at
23 any point in time within a forest management unit a
24 greater network of roads must be maintained?

25 A. That is correct.

1 Q. So there is a greater proportion of
2 roads under maintenance at any point in time with
3 smaller cuts?

4 A. Many roads are being used for only
5 maintenance.

6 Q. And you need more roads for smaller
7 cuts?

8 A. If you more -- you're right, you have
9 more roads if you have smaller cuts. That's my point.

10 Q. Is not erosion often a major concern
11 in the abandonment of roads where maintenance is not
12 practised?

13 A. That's a difficult question to answer
14 in generalities because roads that are abandoned often
15 revegetate so in which case there is not an erosion
16 problem.

17 Q. We have heard evidence throughout
18 this hearing that if the stream crossing guidelines are
19 followed there will be no significant impacts. Your
20 statement here seems to suggest that this would not be
21 the case?

22 A. No, that was not my intent at all if
23 the guidelines are followed, I'm just saying this is
24 not a perfect world and problems do occur.

25 Q. Well, seeing you've taken the -- made

1 the point of listing this in your witness statement, I
2 take it then you are of the view that this is a
3 significant potential in terms of impacts due to stream
4 crossings?

5 A. No, I'm not implying significant, I
6 am just saying the probability of a problem would
7 probably increase.

8 Q. And that may be insignificant, in
9 fact it's likely insignificant, or is that likely
10 significant?

11 A. I would rather not give an answer to
12 that particular question.

13 Q. I understand you would rather not
14 answer it, but I don't think you have that option.

15 A. I'm not sure what is significant or
16 insignificant. That's a judgment, that's a value, you
17 would have to lay it against some kind of measure.

18 Q. But you made that judgment including
19 it in your witness statement?

20 A. I didn't say it was significant or
21 insignificant.

22 Q. Now, the last point that you make
23 there is that the habitat requirements of other
24 wildlife species may not be met?

25 A. Yes.

1 Q. Is this not a truism? Can't you say
2 by the same token larger clearcut may not meet the
3 habitat requirements of some species as well?

4 A. Well, of course the landscape we are
5 talking about here is one where large openings do
6 occur, so presumably the dynamics of the whole system
7 including the total complex of wildlife species is
8 involved in that structure.'

9 Q. But you have indicated in your
10 witness statement that small openings occur also?

11 A. That is right and so do large ones.
12 And --

13 Q. So large cuts --
14 MR. CASSIDY: Let him answer the
15 question.

16 MR. HANNA: I'm sorry, I didn't realize
17 he wasn't finished, Mr. Cassidy. I have not attempted
18 at any point in my cross-examination to interrupt him
19 in answering the questions and I am perfectly prepared
20 to let him finish his answer.

21 MR. CASSIDY: Thank you.

22 DR. METHVEN: Thank you. I was just
23 going to say that the landscape is dominated by the
24 large openings.

25 MR. HANNA: Q. I would like to read you

1 a sentence written by a Ministry biologist, in fact one
2 of the fellows who is responsible for actually
3 implementing the timber management guidelines for
4 moose. It says:

5 "As long as large tracks of
6 timber reach merchantable status at
7 approximately the same time, conflict
8 between the interest of timber
9 management and wildlife management can be
10 expected. A tendency to take large
11 tracks of old forest over a five to
12 ten-year period reduces the large tracks
13 of young forest. The tendency is
14 to take large tracks of old forest and
15 over a five to ten-year period
16 reduce them to large tracks of young
17 forest. Both of these situations are
18 less than favourable for moose, deer and
19 many other wildlife species. Conversely,
20 the greater diversity of distribution
21 of areas ready for harvest, the less a
22 possibility for conflict over the
23 guideline application."

24 Do you disagree or agree with those
25 statements.

1 MADAM CHAIR: That was a long quote, Mr.
2 Hanna, perhaps you can pass it to Dr. Methven and he
3 might look at it.

4 Who said that and where are they saying
5 that?

6 MR. HANNA: Madam Chair, I wasn't
7 planning on referring to this, but the way the
8 questioning went I've now decided I would.

9 It is Exhibit 518, it is entitled
10 Application of Moose and Deer Habitat Guidelines,
11 Impact on Investment and the authors are Racey, John
12 McNicol and Timmerman.

13 MADAM CHAIR: Thank you.

14 MR. HANNA: (handed)

15 MS. BLASTORAH: Mr. Hanna, could we
16 perhaps have a page reference in that article?

17 MR. HANNA: This is the draft copy, Ms.
18 Blastorah. It is page 15 in the exhibit that's been
19 entered. I believe in fact the final copy has now been
20 published. It is actually a Ministry publication. I
21 don't have that page number.

22 MS. BLASTORAH: But it is page 15 of the
23 exhibit?

24 MR. HANNA: Exhibit 518.

25 MS. BLASTORAH: Thank you.

1 DR. METHVEN: There are two parts to this
2 statement. No. 1, it deals with the size of tracks and
3 talking about both of these situations are less than
4 favourable for moose, deer and many other wildlife
5 species. It's possible they are less than favourable
6 for moose and deer and I have great difficulty with the
7 statement about many other wildlife species. I would
8 want that to be much more explicit.

9 It says:

10 Conversely, the greater diversity of
11 distribution of areas ready for harvest,
12 the less a possibility for conflict
13 over the guideline application."

14 I don't know about the 'conflict over the
15 guideline application', I can't make a judgment on
16 that. The guidelines of course are designed I presume
17 for moose and deer.

18 MR. HANNA: Q. Well, let's accept for
19 the moment the view presented here by the Ministry's
20 biologists in terms of their view that there is an
21 advantage to greater diversity and distribution of the
22 areas ready for harvest.

23 DR. METHVEN: A. You're asking me to
24 accept that?

25 Q. Yes, it's just part of this question

1 that I'm asking you.

2 A. I am not going to state that I accept
3 it.

4 Q. I am just putting this in
5 hypothetically. You have made it clear you don't
6 accept that, but I am saying let's accept that just for
7 the purposes of this discussion.

8 You have made it clear you don't accept
9 it. I am now going to put to you a hypothetical
10 question on the premise that this Board finds that they
11 prefer the views of the Ministry biologist over
12 yourself, okay, accept that for the time being.

13 I would like then to put this proposition
14 to you: Are there not parallels between the problems
15 faced with the imbalance of age classes that we have
16 heard discussed on a number of occasions - in fact we
17 have got old growth forest and there is a balance of
18 the age classes - and the matter of the size of
19 clearcuts? I will expand what I mean by the analogy.

20 During the period of transition from the
21 natural to the managed forest, short-term shortages in
22 wood supply can occur because of the uneven
23 distribution of age classes; is that correct?

24 A. You are asking me to comment in
25 general on wood supply?

1 Q. Yes.

2 A. I'm sorry, I can't do that.

3 Q. Okay. Mr. Roll?

4 A. Could you repeat the question?

5 Q. I am putting this forward, just so
6 you understand, this is a general proposition and I
7 just want to understand, we've gone through the first
8 situation and all of this, and I am putting this to you
9 as a general proposition, in fact I think Dr.
10 Baskerville has given evidence on this, but I just
11 wanted to confirm that with you.

12 During the period of transition from the
13 natural to the managed forest, the short-term shortages
14 in wood supply can occur because of the age-class
15 imbalance?

16 A. I would think in reference to a
17 specific forest with a specific kind of age-class
18 distribution, certainly it's possible.

19 Q. Somewhat like the baby boom, you sort
20 of have to move it through and deal with it in terms of
21 developing a more normal distribution of age-classes,
22 you get those permeations going through your
23 population.

24 MR. CASSIDY: You are talking about my
25 generation here, Mr. Hanna.

1 MR. HANNA: Mine too, Mr. Cassidy.

2 Q. The same type of analogy, you have
3 that effect that runs through your population dynamics
4 until you reach an equilibrium?

5 MR. ROLL: A. Yes.

6 Q. Now, back to Dr. Methven. Accepting
7 that we wanted to go to smaller tracts, greater
8 diversity as indicated in the paper I just referred to,
9 historically in the natural forest large even-aged
10 stands were common in some areas. That's the basis of
11 your evidence; is that not correct?

12 DR. METHVEN: A. That is correct.

13 Q. And if in the managed state smaller
14 even-aged stands are deemed desirable, at least in some
15 circumstances, there will be a transition period during
16 which certain adjustments must be made and they may be
17 fairly severe. More roads is one you have already
18 given.

19 A. You are making a statement, or is
20 that a question?

21 Q. I am asking you, do you agree with
22 that?

23 A. That certain adjustments have to be
24 made. We are always making adjustments, yes.

25 Q. Yes, but there is a transition phase,

1 there is a phase going from that natural state in terms
2 of the size of the stands to the managed state which
3 is, and I am putting to you in this case,
4 hypothetically that the desired state might be smaller,
5 more dispersed stands.

6 So it would be a transition, you can't
7 just make that happen overnight?

8 A. Management objectives are set, you
9 have a certain distribution of forest in terms of
10 species and age-class and you then implement the
11 management with that distribution. That is the way it
12 is. I am not quite sure what the transition means
13 precisely.

14 Q. Well, for example -- and, in fact,
15 the major thrust of the paper that I have given you was
16 to deal with the matter of access and the need for
17 increased investment in access in the short term in
18 order to achieve what they are suggesting, which is a
19 greater diversity and distribution of stands ready for
20 harvest.

21 And they are saying that costs and it
22 takes time no matter how much we throw at it we still
23 are faced with the time constraint on how we make that
24 happen?

25 A. Yes, it's being done by the timber

1 companies of course and they have to function in a
2 certain way.

3 Q. Well, I am not at all insensitive to
4 the fact that the costs and the fact that you have
5 consider the distribution costs, but let's just for the
6 time being, there is a cost, there is a cost in terms
7 of roads, and there is a cost in terms of other things
8 also.

9 A. Yes, there is always cost.

10 Q. Now, the point -- the reason I am
11 raising this is that during the transition those costs
12 may appear quite large, but once you have got through
13 the transition, once you have established that managed
14 state - recognizing that it's somewhat idealistic -
15 but as you move towards that managed state. The costs
16 incrementally decline because you have already made the
17 investment; is that not fair?

18 A. We are dealing with a very, very
19 large volume landscape here and it's not like a
20 European landscape with a small woodlot. When we have
21 to he re-access 60 years later there is still a lot of
22 costs involved.

23 Q. But I may well use my primary road
24 network for now to infinity, at least that is as far as
25 I can see in the future.

1 A. You will have primary road networks
2 in place, yes.

3 Q. So as far as that is concerned that
4 investment has already been made?

5 A. That cost has been incurred, yes.

6 Q. And likewise, some of the major
7 secondary roads may well be used indefinitely?

8 A. That's possible, yes.

9 Q. And similar types of costs might be
10 felt in the short term in terms of blowdown; would it
11 not also?

12 Is that not one of the points of taking
13 smaller clearcuts, that you have potentially got more
14 blowdown, you have got more edge, that if you leave
15 residual stands in the middle you've potentially got
16 more blowdown. That's a cost?

17 A. Yeah, but depending on second
18 species, may not be.

19 Q. But once we have got that managed
20 state, or at least we have moved more and more towards
21 that managed state, many of these costs become less and
22 less; do they not?

23 For example, blowdown, if I have a
24 variety of stands, a variety of age-classes with
25 pre-established edges so the trees have adjusted to

1 having exposed edges to their stand because we've got a
2 young stand and an old stand, they aren't going to be
3 wind susceptible -- they are going to be much less wind
4 susceptible over time; is that not correct?

5 A. Yes, there will be some adjustments,
6 yes.

7 Q. So that there are some costs that you
8 have to face now that we won't have to face anywhere
9 near the same extent in the future once we get through
10 the transition?

11 A. That's true. I still have a problem
12 with the word transition though, if you don't mind.

13 Q. In that we never get there, is that
14 what you mean, we never get to the managed state, we
15 are always in transition?

16 A. Well, we are managing the forest.
17 Now, whatever it takes to do that and the rules may
18 change and the desires and everything may change, so we
19 are always adapting and adjusting, so I am not sure
20 what you mean by transition.

21 But here's the point zero and here's an
22 ideal end point, but things are always changing, so...

23 Q. All right. I would like now to move
24 to Section 8.5.2.3 Clearcutting and Scale of
25 Assessment. It's on page 55.

1 A. Yes.

2 Q. My reading of that first paragraph is
3 that you are saying that in order to properly consider
4 environmental impacts one must consider them in
5 appropriate time and space scales and that the
6 appropriate time scales may be a rotation of the forest
7 or longer.

8 A. Yes.

9 Q. Now, this panel is talking about
10 harvesting, but do you see this principle applying to
11 the whole suite of timber management activities, that
12 you have to look at from that sort of perspective in
13 terms of time and space?

14 A. Yes, you have to look at it within
15 that historical evolution and dynamics of that
16 particular landscape you are working on, yes.

17 Q. Both historically and into the
18 future?

19 A. The future hasn't happened of course.
20 I am not sure what you mean.

21 Q. Well, yes, I won't argue that the
22 future hasn't happened, but planning is an exercise in
23 looking into the future and trying to anticipate the
24 future?

25 A. Yeah, the planning is based on that

1 context that I just mentioned.

2 Q. Right. And so when you are saying
3 here that you need appropriate time and space scales,
4 you're talking about appropriate time and space scales
5 into the future?

6 A. Obviously we've got an appropriate
7 time and space scales associated with the dynamics of
8 that landscape.

9 Q. Into the future.

10 A. If you're projecting the future, you
11 obviously do in management, yes.

12 Q. Are you familiar with the concept of
13 cumulative environmental impacts?

14 A. Yes.

15 Q. Is not one of the issues in
16 cumulative environmental impact assessment that an
17 appropriate space and time context must be used to
18 evaluate incremental changes that are occurring?

19 A. Are you asking me should there be
20 continual monitoring, yes.

21 Q. No, I wasn't referring to monitoring
22 at all. I will read it again. Is not one of the
23 issues in cumulative environmental impact assessment
24 that an appropriate space and time context must be used
25 to evaluate incremental changes that are occurring?

1 A. Yes.

2 Q. And in terms of the forest management
3 unit you mention here a number of impacts, and are you
4 suggesting that for those types of impacts an
5 appropriate time context, or at least one appropriate
6 time context would at least be a rotation of the
7 forest? I am talking here about paragraph 2.

8 A. Yes.

9 Q. As we project further into the future
10 things do become more hazy and uncertain; don't they?

11 A. Yes.

12 Q. Is this uncertainty a reason, in your
13 view, to limit our evaluation of effects - the types of
14 effects you have listed in paragraph 2 there - to say
15 five, ten or maybe even 20 years and not to look
16 further than that because of the great uncertainty
17 supposedly the future has in store for us?

18 A. Strategic planning always looks much
19 further than 20 years.

20 Q. And do you see timber management
21 planning as being -- as requiring strategic planning?

22 A. Yes, there's the strategic and
23 there's the management plan and the operations as well.

24 Q. That is an important concept. So you
25 are saying from, your point of view, that there is two

1 elements of the timber management plan, a strategic
2 plan and a management plan which is the implementation
3 side of it; is that what I heard you say?

4 A. Yeah, the management plan deals with
5 implementation, yes.

6 Q. And both of those elements are
7 critical in your view in terms of timber management
8 planning?

9 A. Certainly.

10 Q. Would you advocate looking further
11 into the future rather than -- I better retract that
12 question, if I could please, Madam Chair.

13 MR. HANNA: Madam Chair, I would like to
14 refer to page 5 of the Ontario Federation of Anglers &
15 Hunters draft terms and conditions.

16 I have copies of that for the witnesses
17 and I have them for the parties, if you don't have a
18 copy of it here. I don't propose to enter it as an
19 exhibit just as a -- if you wish.

20 MADAM CHAIR: Yes, please, Mr. Hanna.

21 MR. HANNA: (handed)

22 MADAM CHAIR: Thank you very much.

23 MR. HANNA: Q. I am looking specifically
24 at conditions 21, 22, 23 and 24, and I am looking at
25 what is being proposed here. I am thinking of it in

1 terms of what you said here in terms of appropriate
2 contexts for evaluation in terms of the temporal
3 context.

4 And the intent, I suggest to you, of
5 these terms and conditions is to deal with that
6 strategic component of the timber management plan that
7 looks beyond the management component, and I just ask
8 you: Is this the type of examination of the future that
9 you feel would be useful in looking at the strategic
10 component of timber management planning?

11 DR. METHVEN: A. With these particular
12 items 21 to...?

13 Q. 24, yes.

14 A. 24, which deals with access.

15 Q. Yes, but the concept -- really it's
16 the concept I am talking about. What we are saying
17 here is, we have got a short-term horizon in terms of
18 management planning, we have got strategic
19 considerations beyond that. The purpose of this is to
20 try and deal with that strategic element.

21 I am asking is this the type of thing you
22 are referring to as strategic?

23 A. No, when I was referring to strategic
24 I was really referring to the state of the forest wood
25 supply and its development over time, not the

1 construction and planning of roads in a management
2 plan.

3 Q. Oh, I understand that, but you are
4 looking at not just timber but you are looking also
5 at - and in fact it's in your witness statement,
6 Figures 6 through 10 or 12 - of looking at wood and
7 other non-timber values also at the same time in that
8 context?

9 A. Yes.

10 Q. And so from the point of view of
11 looking at non-timber values, not from the point
12 necessarily of how you are going to design a road, but
13 in terms of that same sort of concept do you not see
14 that same sort of concept applying in terms of road
15 accessible areas in the forest management units, forest
16 fragmentation and that type of thing?

17 A. No, personally I separate the whole
18 business of access from the whole business of the
19 development of forest and wood supply in the future.

20 Q. But you do not see the long-term
21 development of the access network in a forest being
22 comparable to the long-term development of the
23 age-class structure of the forest?

24 A. No, I do not.

25 Q. Why not?

1 A. Because the age-class structure is
2 crucial to the sustainability of wherever we are going.
3 In terms of how much wood there is, how the forest is
4 developing, how it's behaving and how far into the
5 future, the road access has absolutely very little
6 impact on that in that sense, in terms of the forest
7 dynamics.

8 Q. It has no impact on things such as
9 forest fragmentation, remote areas, other users of the
10 forest in terms of their long-term dynamics in terms of
11 the use of the forest?

12 A. No, I am talking about the forest
13 itself.

14 Q. Yes, but I am not.

15 A. I think it might be extremely
16 difficult to plan a road network beyond the 20-year
17 time frame.

18 Q. It's extremely difficult to know what
19 a forest is going to look at three rotations into the
20 future; correct?

21 A. Our tools and capabilities on that
22 one, I think, are a little better.

23 Q. I would now like to move to a
24 statement you make in the first paragraph there on page
25 55 under Section 8.5.2.3. You state:

1 "In the case of forestry practices such
2 as clearcutting, the tendency is to
3 concentrate at the scale of the local
4 action because of the immediate visual
5 impact. This is totally inappropriate."

6 MR. CASSIDY: What page is that?

7 MR. HANNA: Page 55.

8 DR. METHVEN: Yes.

9 MR. HANNA: Q. When you say totally
10 inappropriate, from whose perspective are you speaking?

11 DR. METHVEN: A. I am just saying, I am
12 really suggesting there that that is an ephemeral
13 state.

14 Q. That is an ephemeral state? Would
15 you not agree that this is a totally appropriate level
16 to consider these impacts, if that is the level and
17 scale at which people are impacted in terms of their
18 visual character of the landscape experience and
19 perceive the effect?

20 A. I think people need to understand
21 there isn't that ephemeral state.

22 Q. So you are implying that there is a
23 need for public education in terms of understanding the
24 the role and ecological significance of a clearcut as a
25 means to ameliorate the negative visual impacts caused

1 by clearcut?

2 A. There is always a need for exchange
3 and understanding knowledge, yes.

4 Q. But would you not agree also that the
5 visual impacts of a clearcut can be ameliorated by
6 means other than education, such as the design of the
7 shape of the clearcut?

8 A. Yes, the design and the shape could
9 be done to fit the topographic features of the
10 landscape.

11 Q. So what you are saying is, this is
12 totally inappropriate -- this statement, this is
13 totally inappropriate, it's totally inappropriate with
14 respect to the fact the public doesn't understand the
15 ephemeral side?

16 A. Yes. I am just talking about
17 clearcut in general, yes.

18 Q. I am talking about clearcuts also.
19 But it may still be an appropriate concern in that
20 there may be other mitigative measures that haven't
21 been used that might well have been used and,
22 therefore, the concern is appropriate?

23 A. Oh yes, that is true.

24 Q. Are not many of the actions that one
25 might take to increase the visual aesthetics of the

1 clearcut also advantageous in terms of enhancing the
2 habitat value for many wildlife species by increasing,
3 for example, the length of edge?

4 A. For those species that require edge.

5 Q. In terms of evaluating environmental
6 impacts, are you suggesting that the impacts must be
7 considered from both short and long-term perspectives
8 and not solely the short term?

9 A. Yes.

10 Q. But they must be considered also from
11 the short-term point of view?

12 A. Yes.

13 Q. Now, you mention in terms of impact
14 on aesthetic quality that it should be done on a
15 landscape basis. I am not sure what you mean by a
16 landscape basis in this context.

17 I am referring specifically to the second
18 paragraph there, one of the listed impacts in the first
19 sentence, it says:

20 "...the impacts of site quality on a
21 landscape basis."

22 A. It's just that over the landscape new
23 age-classes have to be established and that means you
24 are moving your older age-classes and, therefore, you
25 have to look at it within that whole context.

1 Q. Is it not possible that while 95 per
2 cent of the landscape is visually attractive, five per
3 cent which is not may have a significant influence on
4 the overall value of the visual and recreational
5 experience realized by some users?

6 A. Could you repeat that, please?

7 Q. Certainty. Is it not possible that
8 while 95 per cent of the landscape is visually
9 attractive, the five per cent which is not may have a
10 significant influence on the overall value of the
11 visual and recreational experience realized by some
12 users?

13 MR. CASSIDY: Could I just ask a
14 question. I am not sure where those figures came from.
15 I have been looking, I don't think Dr. Methven used
16 them. To help me follow along, if Mr. Hanna can refer
17 me to where those figures came from, or maybe it's a
18 hypothetical he's using.

19 MR. HANNA: They are numbers that I am
20 putting to the witness as a possibility. I can use 99
21 and 1 per cent if he wishes, I am happy to hear if
22 there is a threshold. It's just suggestion of a
23 percentage.

24 MR. CASSIDY: Thank you.

25 MR. HANNA: I can tell you how I came up

1 with the five per cent. I was looking at the area of
2 the forest management unit that might be disturbed --
3 in a disturbed state at any point in time, if you have
4 got one per cent of the area being harvested and say
5 five years to regenerate it, you get five per cent, but
6 that is how I did it.

7 DR. METHVEN: Yes. So you are saying
8 that five per cent of the area could be in early stages
9 of development.

10 MR. HANNA: Q. But may be visually - and
11 you have done visual analysis - if you go in and do a
12 visual analysis you find that people would say that
13 isn't as attractive as another stand?

14 DR. METHVEN: A. That's true, it's in
15 the eye of the beholder. To some people that may not
16 be aesthetically pleasing.

17 Q. Has not this type of finding been
18 common in the research in this field for a number of
19 years, that often just small elements of the landscape
20 have a dominant effect in terms of the overall
21 experience that people express about a site?

22 A. For certain people, that is true,
23 yes.

24 Q. The relationship between visual
25 quality and user satisfaction are not, in your view,

1 linear and directly proportional; is that correct?

2 I can just give you an example. You said
3 five and 95. So if I said five per cent, there is a
4 reduction in satisfaction by 25 per cent. If I go to
5 90 and 10, it may not be just simply 50 per cent it
6 could be 75 per cent, it's not a direct linear
7 relationship.

8 A. I have never actually measured it,
9 but I would judge probably not.

10 Q. Are you aware of research that has
11 been ongoing over the last 15 years and more and is
12 currently going on in terms of developing timber
13 management prescriptions to improve the visual quality
14 of timber management activities?

15 A. I am aware of it, but no more than
16 that.

17 Q. In looking at your statement here in
18 Section 8.5.2.3, are we to conclude that because this
19 is an ephemeral factor it's not of concern or do you
20 feel this is something that should still be of concern
21 and dealt with at the appropriate level?

22 A. The fact that a certain proportion of
23 all the age-classes have to be established is just
24 necessary, it's a fact of life, and for some people of
25 course this is a negative aesthetic experience to view

1 these areas. It can either be just because it is an
2 early age-class or because some other aspect of the
3 situation. So, yes, it's a concern.

4 Q. And something that we should put our
5 minds to from a management point of view at some level?

6 A. Certainly.

7 Q. I would like to now move to another
8 impact that you have listed there on page 55. In the
9 second paragraph you indicate:

10 "The impact on water yield and quality
11 should be assessed on a watershed basis."

12 A. Yes.

13 Q. Is it your understanding that the
14 proposed guidelines for stream crossings and for fish
15 habitat protection are developed on a watershed basis?

16 A. I am not entirely sure of that. A
17 lot of them appear to be concentrating on the
18 contiguous stream question.

19 Q. Is not one of the reasons that one
20 examines impacts on a watershed basis is that you have
21 to deal with the matter of cumulative impacts over both
22 time and space?

23 A. They may or may not be cumulative
24 impacts, yes.

25 Q. But that would be one reason for

1 looking at it from a watershed basis?

2 A. I think it's important to look at it
3 from a watershed basis, yes.

4 Q. So, therefore, it's fair to say that
5 you endorse this watershed level of analysis as being
6 part of responsible timber management planning?

7 A. Yes.

8 Q. I would like now to move to the last
9 paragraph that continues over to page 56, and
10 specifically the matter of soil compaction.

11 Mr. Roll, I will be dealing with you also
12 on soil compaction later, I think you deal with it, but
13 I just wanted to deal with the matters that Dr. Methven
14 has raised.

15 Dr. Methven, I wasn't clear as to why you
16 said that this was an exception with regard to space.
17 Can you explain to me what you mean by that. You say
18 here that the impact on site --

19 A. Could you refer me to it.

20 Q. Yes, it's the first sentence in that
21 paragraph right at the very bottom of page 55, you say:

22 "The exception to this..."

23 I understand that 'this' means this
24 spacial/temporal context that you have been referring
25 to in preceding paragraphs.

1 A. Yes.

2 Q. "...with regard to space, is the
3 impact on the site itself in terms of
4 soil compaction."

5 I just wanted to make sure I understood
6 what you meant why these types of impacts are an
7 exception.

8 A. I am not saying they are an exception,
9 I am just saying basically we usually try to look at
10 these impacts over large time and space scales, but
11 there are certain impacts that need to be looked at on
12 a site-specific basis.

13 Q. Okay. If there is a delay in tree
14 growth due to soil compaction, even if over time this
15 disappears due to various natural factors, whatever, it
16 may still have significant effects in terms of the
17 total benefit realized from the land base over time and
18 space; is that not correct?

19 A. If there is significant soil
20 compaction - I am not suggesting there is - if there
21 is, yes.

22 Q. Yes. Now, on the next page under the
23 Section 8.5.3, the second sentence in the first
24 paragraph you say:

25 "Soil rutting and compaction..."

1 I am really dealing with compaction here
2 not the rutting side.

3 "Soil compaction can result from the use
4 of the wrong harvesting systemic
5 (particularly the off-road transport
6 component), at the wrong place at the
7 wrong time, but this is rarely an issue."
8 And then you go on.

9 Now, when you say 'this is rarely an
10 issue', are you referring to Ontario, New Brunswick,
11 eastern Canada, or all of Canada, or more?

12 A. I am merely referring to the
13 contemporary situation where these things are regarded
14 very seriously and most operators will try to avoid
15 these kind of problems.

16 Q. And why is it regarded very
17 seriously? Why is soil compaction regarded very
18 seriously?

19 A. Because soil compaction can influence
20 productivity.

21 Q. Significantly?

22 A. Depends how much there is on a
23 particular area. If it's a low percentage, then no.

24 Q. Has not soil compaction been
25 identified -- wide-scale soil compaction been

1 identified as a potentially significant problem in many
2 of the provinces of this country, including both
3 eastern and western provinces and some of those studies
4 have shown that it has major economic implications?
5 Are you aware of that?

6 A. I am not aware of the study
7 associated with forestry that says soil compaction has
8 major economic implications; no, I'm not.

9 Q. Well, I won't refer you to it, but
10 there are exhibits already entered in this hearing to
11 that effect.

12 What studies have you done or are you
13 aware of that have been published to support your
14 comment on page 56 that this is rarely an issue, soil
15 compaction, at least in Ontario?

16 A. I said rarely an issue now in terms
17 of measures that are being taken to avoid it.

18 Q. That didn't answer my question, Mr.
19 Methven. I will read it again to you.

20 What studies have you done or you are
21 aware of that have been published to support your
22 comment on page 56 that soil compaction is rarely an
23 issue at least in Ontario?

24 A. My comment is not based on any
25 studies.

1 Q. I would now like to move to another
2 topic that has to do with nutrient depletion, something
3 you spent some time in your witness statement talking
4 about.

5 I am looking first at the first paragraph
6 under Section 8.5.3 on page 56 which says:

7 "The problem is that our collective
8 ignorance far exceeds our knowledge of
9 nutrient dynamics."

10 It sounds similar to what we were talking
11 about in terms of wildlife habitat population
12 relationships.

13 Taking that statement, does this not lead
14 one then to developing a strategy to deal with the high
15 level of uncertainty associated with this potential
16 impact?

17 A. Yes.

18 Q. And what uncertainty strategy are you
19 proposing to deal with the potential adverse impacts of
20 nutrient depletion on forest growth?

21 A. To merely look at the best available
22 scientific evidence with respect to the nutrient
23 cycling and capital on these sites; secondly, to look
24 at the evolutionary and ecological history of landscape
25 dynamics associated with where these actions are taking

1 place.

2 Q. Okay. Maybe we are passing in the
3 night here. Those two things you have told, look at
4 the best information and look at the evolutionary
5 history, seem to be ways to reduce the strategy --
6 reduce the uncertainty, try and reduce the uncertainty
7 as much as you can; in other words, make the best use
8 of the information you have available. Is that not a
9 fair assessment of what you've said?

10 A. Yes.

11 Q. But you've already said here on page
12 56 that:

13 "The problem is our collective ignorance
14 far exceeds our knowledge of nutrient
15 dynamics."

16 So I presume in making that statement you
17 have probably taken into account what you know about
18 the best information we have and evolutionary history,
19 so we are faced with that as a fact of life; correct?

20 A. Yes.

21 Q. Now, so even if we do those two
22 things you've told me, those two actions, we still have
23 that high level of uncertainty there?

24 A. Yes.

25 Q. And my question was, what is the

1 strategy to deal with that uncertainty accepting that
2 that uncertainty is a fact of life?

3 I will just to give you an example. One
4 way to have deal with uncertainty, which is commonly
5 used by some environmental groups, is that one must be
6 extremely conservative in term of your actions?

7 A. Yes.

8 Q. I am asking you, what uncertainty
9 strategy are you proposing given your knowledge of
10 nutrient dynamics and the uncertainty associated with
11 it to deal with the potential adverse impacts on
12 nutrient depletion on forest growth?

13 A. I would suggest, of course, that we
14 do some very sophisticated simulation modelling of the
15 system, structuring our best knowledge; in other words,
16 identify those areas that need to be addressed and
17 researched and then embark on the appropriate research
18 program.

19 Q. Now, Dr. Methven, I believe that you
20 have had quite a bit of experience over the years
21 dealing with this very matter in terms of what you have
22 just described; is that not true?

23 A. Some experience, yes.

24 Q. In fact, I believe you were a
25 scientific advisor, I believe, on probably the leading

1 model in Canada in terms of nutrient dynamics in the
2 Forsythe model; is that not correct?

3 A. Yes.

4 Q. So we do have that simulation
5 modelling capability at the present time?

6 A. The problem is far from solved in my
7 estimation.

8 Q. Okay, I won't argue with that. But
9 I'm back to your uncertainty strategy. And you are
10 saying even with that model we've got lots of
11 uncertainty?

12 A. That's one kind of a model, it's not
13 the only kind.

14 Q. Okay. I am just looking here at your
15 uncertainty strategy. Tell me what you meant then by
16 the simulation model to identify areas requiring
17 research and then undertake the research.

18 What were you referring to if it's not
19 for Forsythe type model?

20 A. There are several kinds of models.
21 This was basically a model constructed on statistical
22 data and field sampling. I'm thinking the other kind
23 of model, a sort of dynamic model based on the best
24 biological knowledge and that functions in a very
25 different way.

1 Q. Okay. Do we have that sort of model
2 at the present time, to the best of your knowledge

3 A. Not one that I think is satisfactory
4 at this point, no.

5 Q. So in order to implement the strategy
6 that you have indicated to me to deal with uncertainty
7 that sort of an exercise would need to be undertaken?

8 A. Yes.

9 Q. I would like to turn now to page 57,
10 the last sentence in the first full paragraph there --
11 not the last sentence, the second last sentence.

12 "This..." and I believe this is referring
13 to the recommendation by Foster and Morrison,

14 "...is sound conservative advice but
15 they are still based on a number of
16 assumptions and uncertainties."

17 Then you say:

18 "So what can be done."

19 I had difficulty because I seem to be
20 hearing on one hand you are saying this is sound
21 conservative advice, so I thought: Well, I better --
22 now we have got some sound conservative advice, and
23 then all of a sudden I hear: Well, so what can be
24 done. It seemed to me it has already been done when
25 Foster and Morrison had presented it to us.

1 Can you help me, I couldn't follow the
2 logic?

3 A. I guess my position is conservative
4 isn't necessarily always good. That was their judgment
5 based on a great deal of uncertainty, but if you look
6 at all the literature that has been done in this
7 subject there is no strong evidence that there is a
8 problem with full-tree harvesting at this time.

9 Q. So when you say --

10 A. Different people can respond to
11 uncertainty in different ways and it's a judgment call.

12 Q. I accept that. But in reading what
13 you have said there, when you say this is sound
14 conservative advice you are not saying it is sound
15 advice, you are saying it's sound conservative?

16 A. That's what I'm saying.

17 Q. So you don't endorse their advice?

18 A. Not at this point, no.

19 Q. And yet you have undertaken the
20 stimulation modelling type exercises that we have
21 talked about or that sort of comprehensive analysis to
22 be able to refute the advice that these authors have
23 come to?

24 A. I am not trying to refute anybody, I
25 am merely presenting my own judgment.

1 Q. And you are a risk taker and they
2 aren't?

3 MR. CASSIDY: Well, that's an unfair
4 question. I mean, you know, those people aren't here.
5 If he wants to call them and ask them that question
6 then the Board can judge between them, risk takers and
7 what.

8 MADAM CHAIR: Do you have a question, Mr.
9 Hanna?

10 MR. HANNA: No, I will retract the
11 question, Madam Chair.

12 Q. Dr. Methven, I would like now to turn
13 to page 58 and in the large paragraph there that takes
14 up the majority of the page, about midway down, you
15 note that in some fires significant proportions of
16 nitrogen and phosphorus are volatilized; correct?

17 DR. METHVEN: A. Yes.

18 Q. Accepting this to be the case, is it
19 not true that at least in the case of phosphorus that
20 this element will likely be precipitated elsewhere in
21 the forest and may well enhance forest growth where it
22 is redeposited?

23 A. A certain amount of those materials
24 can come down somewhere else, yes.

25 Q. And phosphorus is different than

1 nitrogen because it isn't stable in a gaseous form?

2 A. Right.

3 Q. And it tends to be percipitated
4 fairly readily?

5 A. Yes.

6 Q. By reducing forest fires, is not the
7 total amount of the phosphorus percipitated on the
8 forest being decreased?

9 A. You mean it's not the total managed
10 forest phosphorus being redistributed.

11 Q. Fine, redistributed.

12 A. But then that result over time is
13 probably very little change.

14 Q. You're saying if we cut out forest
15 fires or reduce them significantly through forest
16 protection exercises that there is going to be no
17 significant change in the redistribution dynamics of
18 phosphorous over time?

19 A. No, I'm not really saying that
20 because there are other things going on, including
21 rises of pH, increased availability of phosphorus
22 transformation of its form. There are all other kinds
23 of things associated with this. No, I'm not saying
24 that.

25 Q. Well, what are you saying? I am

1 confused now. You said here that the phosphorus during
2 intense fires is volatilized, that is redeposited in
3 certain parts of the forest and, hence, we reduce the
4 degree of forest fire. It seems just by simple syllogism
5 that, therefore, you expect less precipitation
6 redistribution of that phosphorus over time?

7 A. So what we're talking about is
8 redistribution.

9 Q. Nutrients removed in timber
10 harvesting are rarely redeposited on the same forest
11 ecosystems for two reasons; right? One, the wood is
12 transported long distances away from the site which the
13 tree was grown?

14 A. Yes.

15 Q. And, two, The nutrients typically end
16 up in either sewage effluents or lagoons?

17 A. I wouldn't answer that one.

18 Q. Do they normally end up back at the
19 site where the tree was cut?

20 A. No, they do not.

21 Q. Therefore, at least in the case of
22 phosphorus and this volatilization dynamic you referred
23 to, the natural volatilization referred to, the
24 nutrient dynamics are quite different with fire as
25 opposed to harvest?

1 A. Yes.

2 Q. Now, in the second last sentence you
3 say:

4 "Removal of trees in timber management is
5 a cycle. Similar to that, a fire does
6 not constitute a new or radical departure
7 in terms of nutrient dynamics."

8 Dealing specifically with phosphorus,
9 that doesn't seem to jive with what we've just
10 discussed.

11 A. Fire, when it occurs of course
12 has accessed maybe the nutrient pool and usually most
13 of the areas are burnt with large fires which mean
14 crown fires, so hitting the foliage of the tree is a
15 major component. It burns the understorey which in
16 harvesting is not consumed or removed. It consumes a
17 fair amount of the forest floor which in harvesting is
18 not removed.

19 The released nutrients and ash as a
20 result of these processes can also be leached depending
21 on the exchange when passed through the soil and of the
22 remaining organic matter and the weather precipitation
23 events following the disturbance.

24 These losses can be really quite high.
25 As I said, it's occurred 100, 200 times since the

1 glaciation so the situation is probably stablized in
2 that sense.

3 Q. But this is a new element in nutrient
4 dynamics specifically with respect to phosphorus and
5 the forest ecosystem, is it not, the fact that we are
6 removing that rather than redistributing that within
7 the system?

8 A. You are referring to harvesting?

9 Q. Yes.

10 A. Well, harvesting access is a
11 relatively small component of the ecosystem nutrient
12 pool as opposed to fire, so I would think the impacts
13 on the whole over time are probably less.

14 Q. But we don't know how much of that
15 nutrient pool is available, we do know that nutrients
16 in the wood is available, there are -- you said we have
17 got a high degree of ignorance associated with these
18 dynamics; correct?

19 A. We know something about the pool
20 sizes, yes.

21 Q. But we don't know how much that pool
22 the vegetation can access at any point point in time?

23 A. No, that's a flux problem.

24 Q. So it is possible that this new type
25 of -- this new component in nutrient dynamics and the

1 ecological framework could have an effect on the
2 productivity of a site?

3 A. Within the context of the historical
4 and evolutionary development of that system, the impact
5 of that removal is probably in many cases no greater
6 than the normal process.

7 Q. The normal process of removal?

8 A. That is true.

9 Q. And the normal process of removal is
10 what you're suggesting in terms of leaching on the
11 site? What other way is there for it to be removed,
12 phosphorus?

13 A. If you just want to concentrate on
14 phosphorous, I'm looking at the whole nutrient complex.

15 Q. I am dealing specifically with
16 phosphorus.

17 A. So...

18 Q. How else can it be removed from the
19 site? I am asking you that.

20 A. Upwards in a convection column.

21 Q. Correct. And we've talked about all
22 that really is is a redistribution?

23 A. That's a redistribution from among
24 sites.

25 Q. I would like to turn now to Section

1 8.6. My understanding of that first paragraph is that
2 you are saying that the decision to harvest timber on
3 any specific site must be done at the whole forest
4 level because of the temporal and spacial influences
5 that these actions have on the forest and other
6 benefits produced from the forest estate. Is that what
7 you are saying?

8 A. Yes.

9 Q. You go on to say that the choice of
10 which stand to clearcut at which time is crucial to the
11 structure and product flow from the management unit?

12 A. Yes.

13 Q. In terms of 'product flow', I presume
14 you are including both timber and non-timber benefits?

15 A. Yes.

16 Q. Are you recommending then that the
17 evaluation of harvesting patterns and associated
18 effects on the achievement of objectives, be they
19 timber or non-timber, should be undertaken at the whole
20 forest level using appropriate spacial and temporal
21 context?

22 A. Yes.

23 Q. I take it you view this as an
24 integral part of any - I think your word used somewhere
25 in your witness statement - rational decision process

1 lead to decisions to harvest specific stands of timber?

2 A. Yes.

3 Q. Now, in the second paragraph there
4 you make reference in the last sentence - and
5 particularly I am focusing on the implications of not
6 maintaining the disturbance history of the forest
7 either through management or through natural forces -
8 you mention there that the forest can degenerate into a
9 savannah shrubland dominated by ericaceous shrubs.

10 Can you give me an example where a boreal
11 forest in Ontario has degenerated into savannah
12 shrubland dominated by ericaceous shrubs due to lack of
13 disturbance?

14 A. No, this takes some time. I've
15 walked through stands that have been breaking up and
16 have no advanced regeneration of any tree species on
17 them and the conditions for regeneration were not being
18 met. This is a long time process.

19 Fire hasn't been excluded for that long a
20 period to reach that in any terms of any scale and we
21 are now cutting and harvesting, so...

22 Q. So we are talking hundreds of years?

23 A. That depends on the species but
24 probably a couple of hundred.

25 Q. So this is a projection into the

1 future based upon your knowledge of forest dynamics?

2 A. It is very site specific of course
3 and species specific.

4 Q. So not all sites would do this?

5 A. Absolutely not.

6 Q. Would the sites most likely to follow
7 this history be those basic to wet sites on flat areas?

8 A. No.

9 Q. Which ones would it be?

10 A. Mostly dry upland sites.

11 Q. What species of ericacious shrubs are
12 you suggesting would dominate these types of stands?

13 A. Species such as exogens.

14 Q. I would like now to turn to page 63
15 and this is the section dealing with integrated
16 resource management. A favorite topic of my client.

17 MR. CASSIDY: I may be able to assist Mr.
18 Hanna since he wasn't here yesterday and just indicate
19 that the evidence yesterday was - and he is free to
20 cross-examine on whatever he wants - that this is a
21 presentation of simulated models, a stimulation model.
22 It does not represent a real situation or situations.

23 He of course is free to cross-examine,
24 but since he wasn't here yesterday it may help him
25 understand the context in which this was given

1 yesterday.

2 MR. HANNA: Again I thank Mr. Cassidy for
3 his assistance in all sincerity.

4 I did, however, find that the witness
5 statement or this section of the witness statement
6 written by Dr. Methven was quite clear and articulate
7 and I think he made it very quite clear, but I do
8 appreciate that and I will ask my questions in that
9 context.

10 Q. This is -- I think you were using the
11 term strategic level analysis and it's meant more for
12 example rather than as a precise statement of what
13 might happen?

14 DR. METHVEN: A. An example of an
15 exploration technique.

16 Q. And that's the line of questioning I
17 will be following with respect to this.

18 A. Yes.

19 Q. Now, that first paragraph there
20 indicates that timber management - and we are dealing
21 here now just with the overall concept of integrated
22 resource management as I understand it - timber
23 management must concern itself with ecological,
24 economic and social concerns other than timber and then
25 you go on later in that paragraph and say:

1 "Many of them..." I believe you are
2 talking about these other non-timber concerns,
3 "...are dependent on timber harvesting
4 for their survival and conservation."

5 Is it fair to conclude from those
6 statements that, in your view, for timber management to
7 effective deal with these other concerns they must be
8 dealt with simultaneously as in integral part of the
9 timber management planning process?

10 A. Yes.

11 Q. Going back to what we spoke about
12 earlier this morning, this is the fundamental rationale
13 for setting out objectives for timber and non-timber
14 values in timber management plans?

15 A. Yes.

16 Q. In evidence that this Board has heard
17 earlier, we've heard about what's termed two six guns
18 in terms of wildlife management and I will explain to
19 you what two six guns are.

20 One six gun, at least, if you will, the
21 tools that the wildlife manager has in terms of
22 managing wildlife, one of the tools is predation
23 control such as setting hunting limits, handles on
24 season limits, various controls like that, that's one
25 six gun. The other six gun is manipulation of the

1 habitat. There are basically two levers to manage the
2 population.

3 Now, presuming that I have a good
4 understanding of the relationship between moose and
5 forest structure, would you not agree that if one sets
6 a moose population target at whatever level with
7 pre-established hunting intensity and natural predation
8 levels - one six gun and I've already decided what I
9 will do with that - that in fact one has implicitly
10 described a forest structure to achieve the overall
11 objective?

12 A. Yes.

13 Q. Is one of the reasons that you see
14 the need for timber and non-timber values to be dealt
15 with simultaneously is that they are joint products?

16 You are familiar with the concept of
17 joint products? They are joint products of timber
18 management?

19 A. Yes.

20 Q. Dr. Methven, you will be happy to
21 know this is my last section dealing with you and I am
22 going to be moving to Mr. Roll. I just like to give
23 witnesses a little encouragement that they are...

24 A. Thank you, Mr. Hanna.

25 Q. I am now going to deal with the

1 example that you've presented here for illustrative
2 purposes and that is this rudimentary habitat supply
3 analysis that you've have presented.

4 Do you disagree that it's rudimentary?

5 A. No.

6 MR. CASSIDY: I trust you don't mean that
7 in a derogatory term, Mr. Hanna.

8 MR. HANNA: I didn't suggest it in a
9 pejorative way whatsoever, Dr. Methven, so if anybody
10 interpreted it that way I wish to make that clear it
11 was not meant in that way.

12 Q. Now, a general question first. I
13 don't think you need to refer back, we've just been
14 through it in a fair amount of detail, but on page 55
15 we talked about the different impacts and one of the
16 impacts that you had was the impact - this is the
17 temporal and spacial context in the assessment - that
18 the impact on wildlife on a management unit basis was
19 over a period of time many years.

20 So that's one of the things that has to
21 be undertaken?

22 DR. METHVEN: A. Yes.

23 Q. Now, in your view is habitat supply
24 analysis an effective management tool to deal with the
25 type of wildlife concerns that you've raised in the

1 type of assessment that you're suggesting?

2 A. Habitat supply analysys is an interim
3 measure to address this issue of integration of
4 wildlife into the overall forest management.

5 Q. Did you say an interim measure?

6 A. Yes, habitat supply analysis is an
7 interim measure until we get a much better handle on
8 that relationship we talked about previously between
9 habitat and population.

10 Q. I have to ask this question. What is
11 the final measure or the final tool that you see once
12 we get that understanding?

13 A. Well, we will design habitat
14 specifically to particular populations of different
15 species. Habitat supply analysis, as it is currently
16 being developed, stops short in terms of population.

17 Q. I think it's important I understand
18 this before I go on, and I am looking at Figure 6 for
19 example which I interpreted as a rudimentary, not a
20 pejoratively rudimentary, habitat supply analysis and
21 the "z" axis is moose population.

22 A. Yes.

23 Q. It seems to me there is a connection
24 in this analysis between habitat and population. I
25 don't understand what you meant about that?

1 A. Well, that is because we basically,
2 in a sense, arbitrarily used our best knowledge to try
3 and make a connection between age structure of the
4 forest and the preference for moose, and I wouldn't
5 want to live by it.

6 It's an exploration, it's a learning
7 process, it's a means for group to sit down and
8 structure and basically play 'what if' games with their
9 knowledge.

10 Q. Yes, I don't dispute that. And what
11 you are saying, as we develop more and more experience
12 in terms of these relationships, we will be more and
13 more confident in terms of developing these types of
14 projections?

15 A. Yes.

16 Q. But habitat supply analysis still
17 requires that connection between population and
18 habitat?

19 A. Basically.

20 Q. Even if it's used in a 'what if'
21 type context?

22 A. Habitat supply analysis as it's
23 currently being structured in programs funded, for
24 example, by Habitat Canada is really focused on one's
25 best estimation of what a particular species needs in

1 terms of proportions of species and age-classes and
2 without really committing to what that means in terms
3 of hard population numbers.

4 Q. When you say hard population numbers,
5 you are saying -- maybe will ask you: What do you mean
6 by hard population numbers?

7 A. Well, it's like the moose guidelines
8 for example, where there is proportions of young mixed
9 wood and mature conifer in the mix.

10 Q. But based on achieving a certain --

11 A. I am not sure that anybody has said
12 that this is going to give you so many moose.

13 Q. Well, I will leave that for another
14 occasion. Back to my original question. Do you see
15 habitat supply analysis, as portrayed here at least, as
16 an effective way to deal with the temporal and spacial
17 type analysis of the sort you describe on page 55 for
18 wildlife?

19 A. Yes, it's what we have to do now,
20 yes.

21 Q. And do you see this type of analysis
22 providing an essential tool to deal with other concerns
23 related to timber management such as wildlife
24 conservation as we go into the future?

25 A. Yes.

1 Q. Now, on page 63 - and this relates to
2 Mr. Cassidy's assistance to me - you make it clear that
3 this is a strategic analysis rather than an operational
4 analysis; correct?

5 A. Absolutely, because there is no
6 spacial component, yes.

7 Q. And I take it you are aware that
8 there are operational models that do incorporate a
9 spacial component?

10 A. By integrating these with GIS models,
11 yes.

12 Q. Right. And that that type of model
13 then is suitable to deal with the management side of
14 the stuff -- the side of the timber management exercise
15 in addition to the strategic side?

16 A. Yes.

17 MR. CASSIDY: I have some concern here
18 that Mr. Hanna, since he wasn't here, did not hear the
19 qualification of this witness, and I did state today
20 that he is not a wildlife biologist and not qualified
21 in wildlife matters. And so I wouldn't want Mr. Hanna
22 to belabour under the impression that he is.

23 Mr. Hanna may very well want to direct that
24 question to the appropriate people that are -- or call
25 his own evidence in that regard. He's free to ask this

1 witness, of course, but I just want to make sure he's
2 clear as to the nature of the qualifications that this
3 witness can give evidence about.

4 MR. HANNA: Again, I appreciate my
5 friend's assistance. I have carefully reviewed Dr.
6 Methven's curriculum vitae, I also have personal
7 knowledge of Dr. Methven over a number of years in
8 terms of his capabilities and I am well aware of
9 whatever expertise he's qualified in.

10 I am not in any way attempting to ask him
11 for an expert opinion in terms of, for example,
12 population relationships between moose and their
13 habitat and I have no intention at any point in my
14 cross-examination of asking him those type of expert
15 opinions in respect of wildlife biology.

16 The questions I am asking him are at the
17 same level, I submit, as the level of analysis that is
18 contained in Section 8.7 and that is, at a strategic
19 level, conceptual level in terms of how this tool might
20 be used to deal with the very substance of the impacts
21 that he's identified in Section 8 of the witness
22 statement.

23 And, as I have already indicated to this
24 Board, we are intending to call one of Dr. Methven's
25 graduate students as one of our experts to deal with

1 this matter, so that those sort of questions we would
2 put to him.

3 So I appreciate my friend's advice and I
4 will keep my questions at that level.

5 MADAM CHAIR: Proceed with your
6 questions, Mr. Hanna.

7 MR. HANNA: Q. I would like to look at
8 page 71, Dr. Methven, and it's the third full paragraph
9 there, the last sentence. It says:

10 "This is due...", I believe it's
11 referring to the moose -- population dynamics of the
12 moose:

13 "This is due to the fact that high or
14 excess levels of harvest create abundant
15 browse with sufficient area in operable
16 and non-operable stands to provide
17 cover."

18 Now, this statement - and I think you
19 have made it clear in your evidence, I just want to
20 confirm this - this statement is only correct inasmuch
21 as the model was used at the strategic level without
22 spacial relationships?

23 DR. METHVEN: A. This is not saying that
24 this is the way it is, this is defining the assumptions
25 that went into the curves that drive the model.

1 Q. Right. And you also aren't talking
2 about the spacial distribution of the stands in any
3 way?

4 A. No.

5 Q. And so depending upon the spacial
6 distribution of the stands, this statement could or
7 might or might not be correct?

8 A. Right.

9 Q. Accepting the uncertainty and the
10 illustrative nature of it, let's just accept that you
11 can put some reliance in it, does this statement not
12 imply that if the forest manager -- if these habitat
13 relationships that you have captured in here are
14 accurate, does it not imply that if the forest manager
15 carefully designed the spacial configuration of the
16 habitat components, that both the harvest objectives in
17 terms of wood and the population objectives in terms of
18 moose could be both sustained on this land base?

19 A. That's a possible scenario, yes.

20 Q. But it does require careful
21 consideration of the spacial distribution of the stands
22 over time and space?

23 A. Absolutely, yes.

24 Q. And because they are both so closely
25 intertwined, the analysis of the manipulation for both

1 objectives have to be done in tandem?

2 A. They should be, if we have the tool
3 to do it. There is a problem, if I may just express
4 it, that we have the technology to explore the business
5 of spacial distributions and to display it, but we
6 don't know what those different spacial distributions
7 mean to wildlife.

8' MR. HANNA: Madam Chair...

9 ---Discussion off the record

10 MR. HANNA: Q. So what you are saying is
11 there is limitation in our knowledge between the
12 relationships of the habitat and population?

13 DR. METHVEN: A. Yes.

14 Q. Now, I asked you before in terms of
15 adaptive management whether despite limitations we have
16 knowledge if it is not better to lay out in explicit
17 quantitative terms what we do know, make the best
18 decisions, even though we have limited knowledge on
19 what we do know, and learn by our errors over time.
20 Doe that principle not apply also in this case?

21 A. In which case?

22 Q. The case of habitat population
23 relationships with respect to wildlife species?

24 A. Oh yes, yes. As long as we have
25 strong feedback loops built into the system, yes.

1 Q. So the fact that we don't know those
2 relationships is not a reason not to use our best
3 knowledge and to try to develop those relationships?

4 A. No.

5 Q. It's a matter -- what we have to do
6 is do that fully cognizant of the uncertainty
7 associated with our lack of knowledge?

8 A. All through life we make decisions in
9 terms of uncertainties; that is the way it is, yes.

10 Q. Well, what's often heard - I am sure
11 you must have heard it - that we don't know enough to
12 make a decision. Isn't that faulty logic?

13 A. There is the expression that we can't
14 do anything until we do more research, which is similar
15 to what you just said, yes.

16 Q. It's faulty logic?

17 A. We have to make decisions; a
18 non-decision has just as much effect as a decision.

19 MR. CASSIDY: Is it your intention to
20 break at twelve o'clock Madam Chair?

21 MR. MARTEL: Yes.

22 MADAM CHAIR: Yes, it is.

23 Mr. Hanna, when will be a convenient time
24 for you? Will you be finished by lunch hour?

25 MR. HANNA: No, I won't, Madam Chair. I

1 certainly will be finished Dr. Methven by lunch and I
2 expect my questions to Mr. Roll will probably take no
3 more than an hour, an hour and a half at the most.

4 So I will certainly be finished long
5 before we have to rise this afternoon, or certainly
6 before we have to rise today.

7 MADAM CHAIR: All right. Then, will you
8 be finished your questioning of Dr. Methven by twelve
9 o'clock?

10 MR. HANNA: Yes, I had contemplated doing
11 that.

12 Q. Dr. Methven, I would like to turn to
13 Figure 3 on page 62. I believe you qualified in your
14 witness statement that this would only be - this is,
15 first of all, a schematic, you have probably discussed
16 that - that this would be the age-class distribution if
17 you only considered one objective and that would be
18 maximum sustainable harvest; correct?

19 Is that what it says in the title?

20 A. Yes.

21 Q. But this may not be the desired
22 age-class structure in terms of optimum sustainable
23 yield for all forest values from the forest estate;
24 right?

25 A. Optimum for, I'm sorry, all forest

1 values?

2 Q. Yes.

3 A. It may not, no.

4 Q. For example, you may wish to have
5 some stands in the older age-class categories beyond
6 the optimum rotation?

7 A. You certainly may, yes.

8 Q. And you also may wish to have a high
9 proportion of stands in some cases in the younger
10 age-classes for certain wildlife species?

11 A. It's possible, yes.

12 Q. Now, is not choosing this temporal
13 and spacial distribution of age-classes and the
14 composition of the age-classes in terms of species
15 really at the nub in terms of reconciling many of the
16 demands on the forest estate?

17 A. Yes.

18 Q. So then the issue is to establish for
19 a forest management unit the optimum forest structure
20 spacially and temporally in terms of the benefits from
21 the land base, and this would be what you would see
22 coming out of the timber management planning process;
23 is that correct?

24 A. That is what would occur in the
25 timber management planning process, yes.

1 Q. Now, in terms of molding and
2 developing that future that you desire from the forest
3 management unit, do you see this being a tractable
4 problem if one were to approach it from an
5 objective-setting as opposed to a constraint-setting
6 approach using the best available technology we have at
7 the present time such as habitat supply analysis?

8 A. I honestly really don't see any
9 reason for any major conflict in this issue at all.

10 Q. And just in conclusion, Dr. Methven,
11 I just want to make sure I understand this last
12 statement in your witness statement, and that is on
13 page 72, the last sentence.

14 You talk here about this matter of
15 regulating the structure of the forest for conservation
16 of the values, and you say that:

17 "The managed structure may be somewhat
18 different but it's one that can be
19 readily adapted to meet particular
20 concerns or values."

21 And you are referring there to this
22 concept of designing a forest structure spacially and
23 temporally to meet all of the benefits from the
24 resource base -- the land base?

25 A. To meet all the benefits that are

1 decided upon in the management plan.

2 Q. Yes.

3 A. Yes.

4 Q. So that is the message that -- the
5 final conclusion you're coming to in terms of the
6 analysis that you have done here?

7 A. Yes.

8 MR. HANNA: And those are my questions
9 for Dr. Methven, Madam Chair. I am quite prepared to
10 continue on with Mr. Roll.

11 MADAM CHAIR: Why don't you do that.

12 MR. HANNA: Yes.

13 Q. Mr. Roll, I am going to deal with the
14 sections of the witness statement that you are
15 responsible for.

16 MR. CASSIDY: You may have a feedback
17 problem. Can you turn your mike off, Dr. Methven.

18 MR. HANNA: Q. And I am going to start
19 first with Section 4 on page 31. Mr. Roll, when I read
20 this section I got the sense that the forest industry
21 is quite active in developing new harvesting equipment
22 to increase the efficiency of harvesting and to
23 minimize environmental damage.

24 Is that your message of what you are
25 putting out in this section?

1 MR. ROLL: A. Yes, it is.

2 Q. And when I looked on page 32, I just
3 looked down through those paragraphs and I saw listed -
4 you don't have to count them - but I saw four occasions
5 where you talk about high flotation tires and
6 developments in high flotation tires and the attention
7 that the Industry is putting to high flotation tires.

8 And the reason you are putting this
9 attention to high flotation tires is, or at least one
10 reason is to attempt to reduce ground pressure to the
11 greatest possible; is that correct?

12 A. Yes.

13 Q. And we are trying to reduce ground
14 pressure because of the concern or potential concern of
15 soil compaction. That is one reason?

16 A. Yes.

17 Q. And on page 33 you make reference to
18 the ongoing experiments that Canadian Pacific Forest
19 Products have in terms of a particular skidder and the
20 distribution of weight of that skidder?

21 A. Yes.

22 Q. Again for the reason of trying to
23 reduce ground pressure?

24 A. Actually the distribution of the
25 weight on that skidder is partly to reduce ground

1 pressure, but also to allow -- obviously to allow its
2 operation on a wider range of sites.

3 Q. Now, a simple conclusion I came to in
4 reading this was that the forest industry recognizes
5 that there are advantages and needs at the present time
6 to developing technology to reduce ground pressure.

7 A. That is one, yes.

8 Q. I am just -- I realize there is the
9 operational side of things and whatever, I am really
10 just concentrating on the ground pressure for the time
11 being.

12 A. It's one aspect of a whole number of
13 issues, yes.

14 Q. Yes. And one of the reasons that the
15 Industry is working with the tire industry to develop
16 stronger, light-weight, high flotation tires is so that
17 they can be used on more rugged terrain?

18 A. Yes, or a broader range of terrain.

19 Q. And why would you want to use high
20 flotation tires on a broader range of terrain?

21 A. Well, specifically high flotation
22 tires -- I guess the traditional understanding of high
23 flotation are those tires that are of light
24 construction and are used on the very wettest or the
25 high moisture sites and so on.

1 There is a whole range of tire sizes
2 available. High flotation we don't feel is appropriate
3 for below that range of the very widest, so 50-inch
4 tires for example, 50-inch wide and up are considered
5 high flotation.

6 When you go down from that and into the,
7 for example, the 30-inch tires that are becoming common
8 in use on equipment on a variety of sites, I guess we
9 wouldn't really term it high flotation, you would --
10 they are just larger tires, less ground bearing, less
11 ground pressure.

12 And obviously we are developing them so
13 that we can work on a wider range of sites without
14 damage to the tires themselves as well.

15 Q. Right. So damage to the tires and
16 damage to the site, you see those both, there's two
17 sides to it?

18 A. Yes.

19 Q. Now, on the bottom of page 32, you
20 are referring specifically to this and saying that you
21 want to develop stronger, light-weight high flotation
22 tires. Now, when you say high flotation tires there,
23 are you talking about the 30-inch tires or the 50-inch
24 tires?

25 A. The specific reference that I had in

1 mind in writing this was the 30-inch range tire and not
2 the pure high flotation.

3 Q. Okay. And the alternative to the
4 30-inch tire is -- going down the scale, what would the
5 normal size tire be?

6 A. I would think the normal size on most
7 skidders for example today probably is the 24-inch
8 tire.

9 MR. MacKAY: A. Perhaps I could shed
10 some light on that, Mr. Hanna.

11 Q. Sure.

12 A. I believe that the development of
13 skidders over the last 10 years it's not only the tire
14 size increasing because, as Mr. Roll has spoken about,
15 is the necessity to support the size of the skidder.

16 Skidders have developed from a skidder
17 weighing maybe 12- to 13,000 pounds to a typical
18 skidder, as I mentioned this morning, may weight 20,000
19 pounds and the tire size has increased as a necessity
20 of that total weight.

21 Q. Mr. MacKay, are you suggesting then
22 that the actual bearing pressure for tires with these
23 larger skidders is higher?

24 A. No. I would think in relative terms
25 it's probably still around that 10 to 12 psi range that

1 went before you get past 30-inch width tire which seems
2 to be normal now. My personal experience is 30-inch
3 wide maximum. The high flotation ones, obviously they
4 are down to 5 to 6 psi.

5 Q. See I am having some difficulty with
6 that response, Mr. MacKay, because I am looking, for
7 example, at the Canadian Pacific Forest Products
8 statement on page 33 and I don't see any reference
9 there to the fact that you have got larger machines in
10 fact, or that the bearing pressure stays the same, in
11 fact it seems clear to me in reading it at least that
12 these tires will reduce the ground pressure of each
13 wheel.

14 Now, I must admit what you just said
15 doesn't seem to match with what I have read here.

16 MR. ROLL: A. I think I can help, Mr.
17 Hanna. The specific reference - and it's very specific
18 to a particular kind of cable-activated grapple skidder
19 that was used - what was happening is that with using a
20 conventional skidder and mounting this grapple on the
21 back of that skidder the weight distribution, because
22 of the configuration of the grapple, was shifted back
23 towards the rear wheels.

24 So there were control problems - there
25 were lots of other problems- but one of the problems

1 ended up being that with that weight on the rear tires
2 it became easier for the machine to become bogged down
3 if there was any kind of wet condition at all.

4 Q. Yes, I understood that, and I
5 understand the principles that you are explaining to
6 me, Mr. Roll.

7 I thought that was described in the
8 second paragraph on page 32 where it talks about the
9 problem with traction and distribution of load and
10 fairleads and all those good things. I didn't
11 interpret that to be the same example as being
12 described in this paragraph.

13 A. It's not.

14 Q. Are you saying it is?

15 A. It's not, I say the--

16 Q. What did you tell me?

17 A. --the reference on page 33 is
18 specific to a kind of grapple skidder that we were --
19 or kind of grapple configuration on a skidder that we
20 were working with, that we were experimenting with, and
21 in order to make it work we had to lengthen the frame
22 on the skidder and redistribute the weight to each
23 wheel to make it obviously more productive but, at the
24 same time, to allow us to operate on that range of
25 sites that we operate on. So that reference is very

1 specific to that.

2 Q. So you are saying to reduce soil
3 disturbance and compaction?

4 A. Yes, to minimize any disturbance.

5 Q. Just a minor thing on that. I
6 understood what you are saying, you have got this load
7 distribution and your machine becomes unstable because
8 you haven't got equal distribution on your wheels.

9 But this statement says reduce the ground
10 pressure of each wheel, not of some wheels.

11 A. Well, perhaps I wasn't specific
12 enough in my wording. I guess -- what I mean is that
13 the weight is redistributed to the wheels, to the -- in
14 the four -- on the four drive wheels - there's four
15 driving wheels on the skidder - and by doing that you
16 reduce the ground pressure of where the load was on the
17 rear wheels. That is the intent.

18 Q. Fine,, so we are talking about
19 redistribution?

20 MR. CASSIDY: Well, that is what it says,
21 better distribution of weight. That is what it says.

22 MR. HANNA: No, Mr. Cassidy, in all
23 respect, it says thereby reducing the ground pressure
24 of each wheel.

25 MR. ROLL Perhaps I just wasn't clear

1 enough in my writing.

2 MR. HANNA: Q. Yes, I understand.

3 MADAM CHAIR: Do you have your
4 clarification, Mr. Hanna?

5 MR. HANNA: Pardon?

6 MADAM CHAIR: Do you have your
7 clarification from Mr. Roll?

8 MR. HANNA: Yes.

9 MADAM CHAIR: Do you want to break for
10 lunch now?

11 MR. HANNA: Fine with me, Madam Chair.

12 MADAM CHAIR: Okay. We will be back at
13 one o'clock.

14 ---Luncheon recess taken at 12:00 p.m.

15 ---On resuming at 1:00 p.m.

16 MADAM CHAIR: Good afternoon. Please be
17 seated.

18 MR. CASSIDY: Madam Chair, I have a
19 matter of clarification with respect to the ruling
20 issuing today. That portion of the ruling dealing with
21 the satellite visit in Fort Frances states that the
22 Board will rely on an all-party open house to provide
23 information to the public. I had a conversation with
24 Ms. Devaul about that, but ask for your clarification.

25 When you say that the open house will

1 take place before, during and after the formal hearing
2 hours in your ruling, I obtained a copy of public
3 notice which was issued in this matter on the 18th I
4 believe which refers to an informal public session
5 occurring on dates that are in effect before the
6 hearing, and I am wondering if you can tell me what is
7 the Board's intention with respect to during and after?

8 Ms. Devaul indicated to me that your
9 intention was that that would -- to her knowledge, that
10 the informal public session would occur concurrently;
11 that is, both during and after, however, I am at
12 somewhat of a loss as to determine how long or what you
13 expect after the hearing.

14 MADAM CHAIR: This is our intention, Mr.
15 Cassidy. The notice had to go out before we--

16 MR. CASSIDY: Yes, I understand that.

17 MADAM CHAIR: --established the final
18 details, although when it is advertised locally the
19 public will be made aware that the open house will be
20 open while the hearing is taking place and afterwards.

21 Some parties suggested to us that they
22 thought it was a good idea, the Board agrees with that
23 because we won't be having a witness panel, we won't be
24 able to give out information during the course of the
25 hearing, so for people who have particular questions or

1 want something during the course of the hearing, we
2 will be directing them to speak to people at the open
3 house.

4 MR. CASSIDY: In the very same room.

5 MADAM CHAIR: Well, I understand at Fort
6 Frances they don't have a separate room, it may be they
7 will set up in the foyer.

8 MR. CASSIDY: I see.

9 MADAM CHAIR: And it may be that Ms.
10 Devaul and Mr. Dadds will be at the back of the room
11 and we will direct them to take people in and out if
12 they have to have some information.

13 So, yes, it is going to take place
14 before, during and after.

15 MR. CASSIDY: And in terms of after, do
16 you have a particular time in mind, until the end of
17 the week or is it at the parties' discretion?

18 MADAM CHAIR: We were thinking in terms
19 of each day that we are there, the two days that we are
20 there, those evenings. We expect the open house to go
21 on as long as there are people around who want some
22 answers to questions and need some information.

23 MR. CASSIDY: I see.

24 MADAM CHAIR: So that will be the
25 Wednesday and Thursday night. It may be that ten

1 minutes after the hearing is over there won't be
2 anybody around, so the open house is over. But we
3 don't expect it to continue the day after we leave.

4 MR. CASSIDY: As I understand it,
5 according to the notice, the public session ends at
6 twelve o'clock on Thursday the 24th, but you are saying
7 that if people wanted to stay around the parties wanted
8 to stay around --

9 MADAM CHAIR: If there is a need for
10 someone to stay an extra hour, then we expect that to
11 happen.

12 MR. CASSIDY: All right.

13 MS. BLASTORAH: Madam Chair, if I could
14 just make a few additional inquiries about the same
15 matter.

16 I have spoken very briefly to Mr. Dadds
17 and I understand that that procedure of having the open
18 house continue after the final day of the hearing,
19 morning or afternoon or whatever it may be, could be a
20 problem in some situations. So I just wanted to
21 clarify whether this is intended to be sort of a dry
22 run in Fort Frances.

23 In particular, he indicated where was one
24 combination sort of back-to-back community hearings,
25 where it would be physically impossible to pack

1 everything up and move it from one place to the next if
2 we had to continue the open houses in that way.

3 MADAM CHAIR: Yes, this was a concern
4 that Ms. Murphy raised in the discussion last week or
5 two weeks ago, and we said that as long as there were
6 some people around to answer questions, that's fine.
7 You could take down the displays.

8 MS. BLASTORAH: Okay. It's not
9 contemplated that all the material has to be there?

10 MADAM CHAIR: No.

11 MS. BLASTORAH: Thank you.

12 MADAM CHAIR: Mr. Hanna?

13 MR. HANNA: Thank you, Madam Chair.

14 Q. Mr. Roll, we were talking before
15 lunch about Section 4 and trying to get clarification
16 of this matter about high flotation tires and whatever.

17 I think I understand now that there is,
18 if you will, two categories of high flotation tire and
19 that the driving force for one, the large tires, the
20 50-inch tires is primarily on stated soil conditions
21 such as muskeg and that sort of the thing, and the --
22 at least one of the driving forces for the smaller,
23 still high flotation tires, is the increased size of
24 the machines, but also to reduce site damage to the
25 extent possible.

1 A. Yes, that's right.

2 Q. Are you familiar with the use of
3 compaction limits or maximum wheel-bearing pressures
4 for different site types in silvicultural prescriptions
5 as a basis to protect against soil compaction and
6 related site degradation?

7 A. No, I'm not.

8 Q. Given the amount of attention that
9 the Industry apparently is focusing on developing
10 improved equipment - and I think you have indicated
11 part of the reason is to reduce soil compaction - do
12 you see any role for a formal system in terms of
13 setting limits for certain types to stimulate any less
14 progressive companies to keep up with progressive
15 companies such as yours in terms of site protection?

16 A. I really wouldn't think so, Mr.
17 Hanna. I guess generally the kind of thing that we
18 wanted to portray in our evidence was one that - and it
19 is also referred to later on, and I believe it's in
20 Section 7 where we are talking about environmentally
21 sound activity - the two are very closely tied, but
22 basically is, that anyone in the Industry, be they
23 large operators or small operators, it just makes sense
24 to make the least disturbance possible because in fact
25 that disturbance costs you in terms of productivity

1 levels and it is the major companies that end up doing
2 the development work or working with manufacturers,
3 working with engineering facilities, universities,
4 FERIC and so on.

5 But that knowledge is available and has
6 been used to develop equipment that then becomes
7 available to the smaller operators as well, and
8 actually that's the reason for the range of equipment
9 that's out there right now.

10 Q. Yes, but I didn't say small and
11 large, I said some may be progressive and some may be
12 less progressive. That doesn't necessarily mean small
13 and large.

14 A. Okay.

15 MR. CASSIDY: It is also a hypothetical,
16 which my client doesn't accept, and we will look
17 forward to proof that there are less progressive
18 companies out there, if that in fact might actually be
19 true.

20 MR. HANNA: Q. Continue, Mr. Roll. Do
21 you have some more to add?

22 MR. ROLL: A. No.

23 Q. What recourse do you see in the event
24 that a recalcitrant firm - in the event that one should
25 exist - decide to not use state-of-the-art harvesting

1 equipment that results in soil compaction and reduced
2 site productivity?

3 A. I really couldn't answer that, Mr.
4 Hanna. Again, speaking on behalf of the Industry, as I
5 stated yesterday, I believe that there's a general
6 Industry belief, position, philosophy, if you like,
7 that it is in our own interests to ensure that the
8 sites remain viable to enable renewal activities and so
9 on to take place on those sites so that we can
10 regenerate the forest and continue to utilize the
11 resource.

12 Q. Do you know of any studies undertaken
13 by the Industry to examine the extent and significance
14 of this potential problem?

15 A. What potential problem is that?

16 Q. Site compaction and its effects on
17 site productivity?

18 A. I am not aware of any studies
19 specifically, no, not personally.

20 Q. And the basis for concluding that
21 this isn't a problem, that it's in your interest to
22 maintain site productivity, is simply based upon your
23 judgment, there is no analysis to support that
24 judgment?

25 A. Well, certainly analysis in the sense

1 of -- what I am doing is I'm relying on my experience
2 and I am relying on the experience of the other people
3 that are on this panel. We certainly discussed all
4 these points.

5 Speaking on my own, I say that in my
6 experience I don't see soil compaction on the range of
7 sites that I am familiar with to be an issue, to be a
8 problem, given the kind of equipment that we are
9 operating and the kinds of results that I see coming on
10 those sites in terms of regeneration and renewal
11 results.

12 Q. Soil compaction though is not a
13 classical, what's termed, cumulative environmental
14 impact, it is incremental, very small changes that are
15 hard to detect but in total, in aggregate can be
16 significant?

17 A. I'm not aware of that. As I say, in
18 putting this together I was relying on my experience
19 and those of the other people on the panel.

20 Q. Did you have a chance to review the
21 exhibits that were introduced dealing specifically with
22 soil compaction studies in a number of provinces that
23 were introduced by my client, the Ontario Federation of
24 Anglers & Hunters...

25 A. I can't remember reviewing those, no.

1 Q. But we don't have, to the best of
2 your knowledge, a comprehensive analysis for Ontario
3 dealing with the potential scale of magnitude of those
4 impacts?

5 A. No, not that I am aware of.

6 Q. Can move now to Section 1 which is on
7 page 26, Integration of Harvest and Renewal Activities.
8 I am looking specifically at the second paragraph, the
9 second sentence which says that:

10 "The Industry believes that decisions
11 relating to harvesting in a management
12 unit that are made with the knowledge and
13 understanding of the unit's renewal
14 objectives, lead to efficient and
15 environmentally sound planning and
16 operations."

17 Do you see that?

18 A. Yes.

19 Q. Would you agree that these harvesting
20 decisions would also be improved by a knowledge and
21 understanding of the unit's non-timber objectives as
22 they relate to timber management activities?

23 A. I think at the timber management
24 planning level certainly, yes.

25 Q. Would you agree that it is important

1 for Industry foresters to have clear direction in terms
2 of both the timber and non-timber objectives that need
3 be achieved from a forest management unit in order for
4 them to develop prescriptions on a site to site basis?

5 A. I think that the Industry manager
6 needs the knowledge of where the two might impact on
7 one another, or whatever terms you want to say, and I
8 believe that that's -- that is what happens in the
9 planning process.

10 Q. And in the case of wildlife habitat
11 in forest structure with respect to timber, they are
12 virtually totally intertwined; are they not? I can't
13 think of an example where you could effect the forest
14 structure in terms of timber and not have some
15 associated impact on the wildlife at the same time;
16 they are one in the same?

17 A. In depends I guess on the scale on
18 which you are thinking. I would think on the gross
19 scale, yes, certainly.

20 Q. And not on the specific scale?
21 Isn't that even more compelling at the specific scales,
22 isn't that where the action and decisions actually take
23 place?

24 A. I guess I am at a disadvantage. I
25 don't know what kind of decisions that you are

1 referring to.

2 Q. The kind of thing that I have just
3 spoken to Dr. Methven about in terms of developing a
4 plan, an overall plan through the forest in terms of
5 age-class structure, spacial distribution of the stand,
6 species composition, the forest structure, the dynamics
7 that we are trying to set in place.

8 I know that foresters in the Industry
9 obviously have training and experience in terms of
10 managing the forest dynamics, but if you are looking at
11 those issues you know specifically what you have got to
12 produce in terms of wildlife habitat, it then provides
13 you with a clear direction in terms of boundaries - I
14 think I've used that term with Dr. Methven this
15 morning - the boundaries within which you then can
16 exercise your professional judgment in the development
17 of prescriptions. Do you agree with that?

18 A. I am not still not sure I understand
19 the question entirely. As I understand it though, we
20 do have to know the impacts of those other objectives
21 on timber management, what we are dealing with is
22 timber management.

23 Q. I accept that. And timber management
24 is four activities; correct: access, harvest, renewal,
25 maintenance and protection, and those activities affect

1 wood supply but they also affect non-timber values at
2 the same time?

3 A. Yes, they would.

4 Q. And in an objective management
5 approach you try to deal with them both concurrently,
6 simultaneously? Again, those are words I have used
7 with Dr. Methven. Would you agree with that?

8 A. I guess at the points of interaction,
9 yes, and I guess that my perspective of it is that we
10 are dealing with the planning process, that it has
11 specifically to do for our purposes with timber
12 management.

13 Q. Oh, I appreciate that fully.

14 A. We do, however, need to know where
15 the impacts are when it comes to other objectives and
16 we would certainly like to see - and I think our Panel
17 10 planning can deal with this far, far better - but we
18 would like to see...

19 ---Discussion off the record.

20 MR. ROLL: we would like to see some of
21 those objectives quantified certainly.

22 MR. HANNA: Q. And the advantage of
23 quantifying is it gives a clear direction then for
24 Industry, the boundaries, what they have to achieve in
25 achieving what they see as a primary purpose of

1 supplying wood?

2 A. Yes.

3 Q. Can we move to Section 3 on page 29.

4 You indicate there at the bottom of the first
5 paragraph:

6 "This evolutionary process with respect
7 to the silvicultural systems has created
8 systems that take advantage of the
9 regeneration characteristics of the
10 timber species found in the unit."

11 Is it not true also that the
12 silvicultural systems have a major role to play in
13 terms of the achievement of non-timber objectives, for
14 example wildlife habitat?

15 A. The silvicultural system is a system
16 that's designed to renew the forest--

17 Q. Develop it?

18 A. --in terms of the forest, in terms of
19 the kind of species and specie mixes that are intended
20 in management.

21 Q. Can we just call it forest structure
22 and include in there specie composition, age-class
23 distribution and the spacial configuration of the
24 stands within the unit, because that's what I am
25 referring to, I will keep coming back to in terms of

1 forest structure.

2 A. Okay. It is there to renew the
3 forest, that's the purpose of the system.

4 Q. And to achieve a planned forest
5 structure?

6 A. Yes.

7 Q. And that forest structure has a major
8 impact in terms of wood supply, but on the same token,
9 it may have a major impact on non-timber values at the
10 same time?

11 A. Yes.

12 Q. Now, does it not follow then that the
13 evolution of silvicultural systems is a function, or at
14 least conceptually has to do with regeneration of
15 species and the characteristics -- the ecology of
16 species and also the - how do you say - the non-timber
17 aspects of the renewal and future structure of the
18 forest?

19 A. I would differentiate. I would say
20 that the silvicultural system is one designed to renew
21 the forest; it's a system designed to renew the forest.

22 I would say that the other things you
23 might do in terms of modifying your actual harvest
24 activities in terms of whatever the other values are,
25 that that is something indeed outside of what that

1 silvicultural system - the silvicultural system is
2 there; be it clearcut, to selection cut - is there to
3 renew the forest.

4 Q. Can we move on to Section 5, please.
5 I believe it starts on page -- specifically, I want to
6 look at page 34.

7 Now, my reading of this section is that
8 you are laying out here the rationale for the forestry
9 position that a range of management alternatives must
10 be available in order to deal with the variation within
11 the area of the undertaking; is that fair?

12 A. Yes, that's right.

13 Q. Now, in this section, particularly
14 the first paragraph or so, there is mention of the area
15 of the undertaking -- the variation within the area of
16 the undertaking and, hence, the need for a broad range
17 of alternatives?

18 A. Yes.

19 Q. Now, if we move down to the forest
20 management unit the range of each variable is likely to
21 be reduced; it's not to be as great as you would expect
22 in the area of the undertaking as a whole; is that
23 correct?

24 A. It is not as great, but it is still--

25 Q. Considerable?

1 A. --considerable, yes.

2 Q. Okay. It is considerable but the
3 range of alternatives may not need to be necessarily as
4 broad as they might be within the area of the
5 undertaking?

6 A. I believe they are.

7 Q. Well, are there not some alternatives
8 that would be designed, for example for the Clay Belt,
9 that might not be applicable for the Great Lakes/St.
10 Lawrence Forest, certain sites there?

11 A. Oh yes, definitely.

12 Q. So that the range of alternatives can
13 be narrowed down, a reasonable range of alternatives
14 can be narrowed down as you become more site-specific?

15 A. Yes, as you become very much more
16 site-specific, yes.

17 Q. Now, where this is leading to is
18 this, Mr. Roll. I am sure you accept the fact that the
19 public owns the land and they have certain demands that
20 have to be met. Those are basic principles of timber
21 management?

22 A. Yes.

23 Q. And yet the forest industry is in
24 business, they are trying to carry on an operation and
25 they can't have their hands totally tied; they have to

1 be able to carry on business.

2 So there is a balance here of being so
3 rigid with the forest industry that they can't really
4 carry on the business, and yet so open that the public
5 will or the public concerns or demands are sure to be
6 achieved. Do you see that balance?

7 A. Yes, I do.

8 Q. And one way that my client is
9 proposing to deal with that balance is to try and
10 provide, through the forest industry, as defined and
11 clear statements of what I call the boundaries, the
12 non-timber values boundaries, the production of those
13 benefits that need be achieved off the land base, and
14 as long as the forest industry company forester stays
15 within those boundaries to provide them the
16 flexibility, the professional judgment, all those
17 things that I think that the Board has understood is
18 necessary for you to carry on your business in a
19 reasonable way.

20 Do you see that as a viable approach?

21 A. Again, as I perceive it, that is
22 what's happening now. The flexibility and so on, as I
23 testified yesterday, that I was talking about here was
24 within the terms of the timber management plan and that
25 process within the terms of forest management

1 agreements and those silvicultural ground rules, for
2 example, also within terms of the legislation and
3 within terms of the guides and manuals and so on.

4 Q. And the more clearly I can define for
5 you those boundaries - I have listed a number of the
6 boundaries within which you have to operate - the more
7 confident and less conflict there is likely to be in
8 terms of your operation, because it is very clear that
9 you are within the boundaries.

10 If the boundary is fuzzy, it's not clear
11 whether or not you are operating with the boundary. Do
12 you agree with that?

13 A. Presently on timber operations, and
14 we are dealing here with harvest, I think the
15 boundaries are very clear. The timber management
16 planning process and working from there through to an
17 approved annual work schedule gives us, the operators,
18 the bounds within which we work.

19 Q. Yes. I think we are talking at two
20 levels here, the boundaries in terms of where you cut
21 are very clearly set out and say: Here is the stand to
22 be harvested, here's the harvest limits and that's all
23 pretty clearly defined. I have no problem with that.

24 What I am talking about in terms of
25 bounds are not geographic bounds, but bounds in terms

1 of which you have a range of alternatives available to
2 you.

3 A. Well, as I say, I believe we have
4 that now and those bounds are the ones that I just
5 described having to do with the timber management plan,
6 the annual work schedule, the guides and guidelines
7 that we work with. They provide the manager on the
8 ground basically with the bounds that we work within.

9 Q. Okay. Maybe where I was getting off
10 track here is, you see, I see those bounds as being
11 established in the timber management planning process,
12 and that's a point at which the public has the
13 opportunity to come to you and say this is what we
14 would like to see off that land base.

15 You then are faced with the proposition
16 of then carrying out a set of activities and trying to
17 stay within those bounds of the public perception. If
18 those bounds are not clear, then you have potential
19 conflict.

20 Now, to give you an example. If you look
21 on page 34, the last sentence, starting with therefore
22 you say:

23 "Therefore, harvesting activities that
24 are responsive to mill demands and which
25 recognize the timber objectives for the

1 management unit will provide the Industry
2 with the necessary wood supply."

3 Now, if clear non-timber objectives for
4 this forest management unit - that is what's being
5 suggested here - have not been established as part of
6 the timber management planning process, when you say
7 you have to produce "x" number of hectares of late
8 winter cover for moose in such and such a spacial
9 configuration, if that hasn't been established in the
10 timber management planning process but you have decided
11 that these are the stands we are going to cut and for
12 some reason or another we have to cut more, we have to
13 cut less, we have to cut somewhere else, whatever, you
14 have been given clear direction as to the total spacial
15 and temporal configuration of the management unit
16 that's required. In order for make that adjustment,
17 you have got to go back and basically get the
18 adjustment amended.

19 Do you follow where I am going?

20 A. Yes.

21 Q. So that if I can tell you: This is
22 the product I want off the land base, and as long as
23 you give me that product configured in the way that is
24 most optimal to you in terms of the projections you
25 have as a company, does that not reduce the conflict --

1 the potential conflict and deal with this need for
2 flexibility that you are setting out in this section?

3 MR. CASSIDY: I might be able to be of
4 help to maybe shorten this, I will try.

5 Our term and condition 8 I think is
6 getting at what Mr. Hanna is saying. If it doesn't, I
7 invite him to take it up with the planning panel, Panel
8 10, we're going to speak directly to concerns like this
9 and the previous evidence of Mr. Roll.

10 But I really think our Panel 10 will deal
11 with that, because the term and condition states that
12 each -- the OFIA position is, and OLMA, that:

13 "Each integrated resource plan for timber
14 management shall contain clear and
15 quantified
16 statements of timber management
17 objectives."

18 So my clients agree with Mr. Hanna on
19 that, and in fact I don't know any party that doesn't
20 agree, although I have not carefully exhausted and
21 reviewed every term and condition and maybe there are
22 some that disagree.

23 It goes on to state that:

24 "Objectives for non-timber values will be
25 quantified in terms of type of change

1 made to the forest cover."

2 I just throw that out, because I think we
3 could shorten today and give Mr. Hanna some ideas for
4 cross-examining our Panel 10 because that seems to me
5 to be right on the point that he's talking about now.

6 MR. HANNA: I appreciate Mr. Cassidy's
7 direction. It has sort of been a chronic disease we
8 have all sort of faced in this hearing is that we've
9 got a series of panels dealing with a series of
10 subjects and one that integrates them all and whatever.

11 I only raise this subject because of this
12 section which deals specifically with the need for
13 flexibility. The reason I am raising it with this
14 witness at this time is my client accepts the need for
15 the forest industry to have some flexibility in
16 practicing forest management. What we are looking for
17 is a way to minimize the conflict and the only reason I
18 raised it was because - I don't disagree, Mr. Cassidy,
19 it is in your terms and conditions - I wanted to ensure
20 that this witness agreed with that, particularly in
21 terms of the section he has written in his witness
22 statement. If he says yes, fine, I'm done.

23 Q. Do you agree with that principle?

24 MR. ROLL: A. Of flexibility?

25 Q. And defining the boundaries as

1 clearly as possible in terms of both timber and
2 non-timber values so that flexibility can be practiced
3 as unfettered as possible within those boundaries?

4 A. Well, yes, I would agree with it, as
5 I understand it in the Industry -- as it's expressed in
6 the Industry terms and conditions.

7 Q. Okay. And one last point that deals
8 with this and; that is, the second component of your
9 statement here which says that it's critical that a
10 broad range of cost effective management alternatives
11 be available.

12 Is not the definition of cost effective
13 that you have pre-determined limits within which you
14 operate and then looking at the most cost effective way
15 to operate within those limits as opposed to an
16 optimization exercise?

17 A. Yes, I think that is right.

18 Q. So again, if we provide this clear
19 definition of the boundaries in which you operate, you
20 are then given the flexibility to practice cost
21 effective management as long as you stay within those
22 boundaries; it provides you with that opportunity?

23 A. Yes. In that statement the kind of
24 things that I had in mind were things that relate
25 specifically to our harvest operations; so the timing

1 of the operation, the types of equipment we use,
2 specific types and combinations of equipment.

3 Q. It could also be the scale and
4 location of the cut?

5 A. Yes.

6 Q. Yes. And those are important things
7 both for timber and non-timber values?

8 A. Yes.

9 Q. Yes. And so that you would have the
10 opportunity -- provided you have the forest structure
11 required as defined the boundary, provided you stay
12 within that boundary then you can practice that cost
13 effective management with the flexibility that you are
14 demanding?

15 A. And the boundaries that I have
16 described in qualifying this yesterday were the
17 boundaries that we work within of the timber management
18 plan, the forest management agreement and its ground
19 rules and so on, so...

20 Q. Yes.

21 A. I established those boundaries
22 yesterday.

23 Q. Yes. Can we turn then to Section 6
24 which has to do with the Industry experience.

25 My discussion of this section, Mr. Roll,

1 deals with looking at how this Industry experience can
2 be used with two approaches; one being what I have
3 termed throughout this hearing as a constraint approach
4 and one being an objective approach -- an
5 objective-setting approach.

6 I put to you first this question: If a
7 constraint approach is used to manage a non-timber
8 value such as guidelines and those guidelines are
9 discretionary in their application such that tradeoffs
10 are inherent at their application at every level, does
11 this not put the manager immediately in a conflict
12 resolution situation?

13 A. I really don't understand the
14 question, I am sorry.

15 Q. Let me give you an example. The Fish
16 Habitat Guidelines are not discretionary in their
17 interpretation, instead they have mandatory provisions;
18 correct?

19 A. Correct.

20 Q. They have specific setbacks that are
21 tied to specific terrain features and waterbodies?

22 A. Yes.

23 Q. In these cases the manager is given
24 virtually no discretionary leeway, he must virtually
25 follow the guidelines for all intents and purposes?

1 A. Yes.

2 Q. But this is not the case with the
3 Moose Habitat Guidelines; is it?

4 A. No, it's not.

5 Q. Does it not follow then that each
6 time the Moose Habitat Guidelines are applied that the
7 industry manager must, in concert with the Ministry of
8 Natural Resources biologist or whoever, essentially go
9 through a tradeoff procedure in terms of establishing
10 the moose objective for the unit, deciding on the
11 relationship between the habitat and the moose
12 population, then relate that to the spacial and
13 temporal context of the forest over time and, at the
14 same time, try and make these economic tradeoffs, cost
15 effective type things that you are faced with on a
16 daily basis as a timber manager; is that not fair?

17 A. Those certainly wouldn't be my words
18 but, yeah, each time that they are applied there is
19 consultation and there are that range of issues,
20 obviously site and situation-specific, that they deal
21 with, yes, that's true.

22 Q. And the reason there is consultation
23 is because you have to make tradeoffs. Because there
24 is compromise, it's a fundamental part of that
25 exercise?

1 The moose biologist wants hundred hectare
2 clearcuts, the forest industry wants larger clearcuts.
3 I put that very simplistically, but it's that sort of
4 process that you are faced with.

5 A. Again, it may be semantics, but I
6 don't think it's a compromise again following Dr.
7 Methven, but there is consultation and there certainly
8 is, in the case of the moose guidelines I believe, a
9 good understanding of the direction that those
10 guidelines give.

11 I guess -- as I said yesterday, I tend to
12 think that one of our roles in the Industry is to
13 complement that Ministry database and perhaps that is
14 why I have difficulty with your phrasing of it. I
15 prefer to think of it that way.

16 Q. Well, I accept the Industry's
17 proposition in terms of database and I tell you that my
18 client is encouraged by that.

19 But what I am getting at is this process
20 that you are talking about, this dialogue,
21 consultation, that occurs at all stages, it occurs in
22 the timber management planning process, but a lot of it
23 occurs when you are doing annual work schedules and
24 actually getting out in the field and making those
25 decisions; is that not fair?

1 A. Yes, that's right.

2 Q. And the public is not involved in
3 those consultations; are they, not the ones after the
4 timber management plan?

5 A. No, but the ones after the timber
6 management plan are definitely within the bounds of the
7 decisions made at the timber management planning level.

8 Q. But the timber management plan level
9 doesn't tell us what the structure and nature of the
10 cut is going to look like, we only have a general idea
11 of where the stand is going to be cut?

12 A. Right. But I guess the public
13 involvement at that point is -- through the public
14 process, the public becomes aware of and if they choose
15 to they can become knowledgeable about. There is
16 certainly every opportunity, both the resource side,
17 the side -- the land base side, what is out there, as
18 well as the content of those guidelines that we are
19 dealing with.

20 So I would say the public is involved in
21 that sense. They have the opportunity to see all that
22 and, as you know, in our terms and conditions we have
23 said that we believe in the mandatory use of those
24 guidelines and we are talking about a somewhat
25 different process to ensure that they are always

1 state-of-the-art and current.

2 Q. Yes.

3 A. And --

4 Q. But...

5 MR. CASSIDY: Let him finish.

6 MR. ROLL: So we support that.

7 MR. HANNA: Q. But there's a fundamental
8 difference between mandatory use of the guidelines and
9 the conditions of the guidelines being mandatory and
10 discretionary, and that is the difference between the
11 fish guidelines and the moose guidelines?

12 MR. ROLL: A. Yes.

13 Q. If the timber management plan
14 contains specific prescriptions in terms of habitat
15 supply, in terms of forest structure - if you define
16 what that is - does the public then not have a much
17 clearer understanding of what, if you will, they will
18 get at the end of the planning period or over the next
19 rotation of the forest are expected to get?

20 MR. CASSIDY: You know, we are really
21 into planning evidence here. This is all Panel 10 and
22 I envisage that this is all going to be repeated again,
23 and that means this is a waste of time.

24 And I suggest, Madam Chair, that Mr.
25 Hanna be asked to move on and deal with this in Panel

1 10. That is really planning evidence.

2 MADAM CHAIR: I agree with Mr. Cassidy's
3 objection, Mr. Hanna, this is planning evidence.

4 Did you have any more questions to put to
5 Mr. Roll about flexibility, which is where I think you
6 got started on -- or rather the Industry experience, I
7 am in the wrong section, the Industry's experience.

8 MR. HANNA: All right.

9 Q. Just one last question on Industry
10 experience, Mr. Roll.

11 Provided I can give to you a clear
12 statement of the forest structure that I want in time
13 and space, would you see this as an efficient way to
14 tap into the extensive experience that the Industry has
15 in terms of forest dynamics for specific forest
16 management units and yet provide adequate protection of
17 the public interest?

18 A. Yes.

19 Q. The last set of questions, Mr. Roll,
20 I am just turning to Chapter 7, there is a few
21 questions on this and I will be done, and this has to
22 do with the matter - I suppose I should never tell
23 people that I am in the dark, but I am really looking
24 for your help on this - and that has to do with the
25 last part of this section, the last paragraph on page

1 41 where you deal with utilization.

2 Now, a problem that has come to my
3 attention from discussions with some of the members of
4 the Ontario Federation of Anglers & Hunters, and
5 particularly in the area of the undertaking, has been
6 the apparent wastage of either non-merchantable timber
7 or merchantable timber that, for some reason or
8 another, has not been transported to the mill.

9 MR. ROLL: A. Yes.

10 Q. Have you any experience with this
11 type of problem?

12 A. Only in terms of the operational
13 control of those things. The fact that on our
14 operations things like the tree-length do slip from
15 chokers, those kinds of things happen.

16 As routine we do -- our supervisors do
17 regular inspections during their normal duties, we do
18 specific post-cut inspections, as does the Ministry of
19 Natural Resources, to clean up those things. That is
20 my particular experience with it.

21 Q. Well, some of these members have come
22 to me and said: Look, here are piled cords of wood
23 sitting in the roadside that have been there for five,
24 10 years and are clearly not going to be used by the
25 company. Can you provide me with some reasonable

1 explanation why that might occur?

2 A. No, I can't. Certainly --

3 MR. CASSIDY: I don't think the witness
4 should be required to provide a reasonable explanation
5 for hearsay of such a nature - just har me out - and
6 what I think would be the better way to deal with this,
7 and I have not received any notice of any allegation,
8 as was required under the rules, by this party.

9 If he is going to make those allegations,
10 put his witnesses on the stand and we will ask for the
11 appropriate right of reply and that will then give us
12 something that we can deal with, rather than a general
13 comment which could be applicable to anywhere in the
14 area of the undertaking.

15 MR. HANNA: I am happy to do that, Madam
16 Chair. I was simply trying to get the benefit of the
17 advice of someone like Mr. Roll who has had experience
18 in the forest and there might be an obvious reason to
19 explain that; therefore, there is no reason for me to
20 call that sort of evidence.

21 I am happy that this witness has come
22 forward, and it was not intended in any way to be an
23 allegation. I don't think I used it in -- any
24 statements I made were pejorative or otherwise
25 prejudicial to Mr. Cassidy's client.

1 MR. CASSIDY: That is the only thing
2 which can be determined by argument and, as I say --

3 MR. HANNA: Well, can I be heard out,
4 please?

5 MR. CASSIDY: And, as I say, I will be
6 asking for reply.

7 MR. HANNA: I was simply asking this
8 witness to provide me some direction on that. If there
9 was an obvious explanation for it - I have no idea what
10 that explanation might be - that would have been useful
11 to me and that was the reason I asked the questions.

12 He did raise the issue of utilization in
13 his witness statement and I felt it was an appropriate
14 time to ask him about it.

15 MADAM CHAIR: Well, we got Mr. Roll's
16 evidence and that is that in his experience with his
17 company--

18 MR. ROLL Yes.

19 MADAM CHAIR: --he hasn't run into this
20 sort of situation.

21 MR. ROLL: That's right.

22 MR. HANNA: Okay.

23 Q. Can I just ask then just a couple of
24 other things and I am done, Mr. Roll. Just in terms of
25 stumpage fees, stumpage fees are paid on the basis of

1 the weight of logs delivered to the mill and not the
2 quantity of wood felled during the harvesting
3 operation; is that correct?

4 MR. ROLL: A. Not necessarily all
5 weight, but it's generally scaled at the mill on
6 delivery in one way or another, although I believe in
7 some areas they are still scaling actually at the site
8 in the bush, but not in our company.

9 Q. And based upon your experience, in
10 the majority of the cases it would be based upon that?

11 A. On the major, I do believe on the
12 major mills that's right.

13 Q. And therefore the logging company,
14 whoever might have cut the wood, whether it's the major
15 company itself or a third party cutter, does not pay
16 any stumpage on the wood that isn't delivered to the
17 mill, if that is the situation?

18 MR. HOPKINS: a. Maybe I could add to
19 that. On our woodlands operation and another one close
20 by us located in Cochrane the wood is actually scaled
21 at a roadside in the bush, every piece is measured at
22 the butt and that is what the Crown dues that are paid
23 to the Crown are based on.

24 Q. But it's not based on fallen timber
25 in the bush?

1 A. Merchantable wood that is cut is
2 subject to the regulations under the Crown Act and can
3 be assessed for payment if it's left and not brought to
4 the roadside.

5 MR. HANNA: Panel, I would like to thank
6 you for your time.

7 Madam Chair, those are my questions. And
8 again I would like to thank the Board for granting me
9 leave to cross-examine this panel, given the failure of
10 my party to submit a statement of issues.

11 MADAM CHAIR: Thank you very much, Mr.
12 Hanna.

13 Mr. Freidin, are you prepared to go
14 ahead?

15 MR. FREIDIN: I may not finish, but if
16 you would like me to proceed in any event.

17 MADAM CHAIR: And what was your estimate
18 for how long you would be?

19 MR. FREIDIN: I might finish, if I go
20 right now.

21 MADAM CHAIR: Let's try.

22 MR. FREIDIN: Let's try.

23 DR. METHVEN: Madam Chair, could I be
24 excused for a couple of minutes.

25 MADAM CHAIR: Oh, of course, Dr. Methven.

1 MR. CASSIDY: I think we might take a
2 five-minute break.

3 MADAM CHAIR: Let's take a 10-minute
4 break.

5 ---Recess taken at 1:50 p.m.

6 ---On resuming at 2:00 p.m.

7 MADAM CHAIR: Please be seated.

8 MR. CASSIDY: Madam Chair, just for the
9 purposes of the record today, you will recall the
10 scoping session last night I indicated I would ask Mr.
11 Hanna how long he expected to be in respect of Panel 7
12 and he's kindly advised me that he anticipates being
13 approximately one day at most.

14 So I say that on the record for the
15 benefit of the Board and any other party that wishes to
16 plan for the future.

17 MADAM CHAIR: Mr. Freidin?

18 CROSS-EXAMINATION BY MR. FREIDIN:

19 Q. Mr. Hopkins, let me start with you.
20 I don't have a lot of questions for the witnesses,
21 except I will spend most of my time with Dr. Methven
22 and Mr. Roll.

23 Mr. Hopkins, you indicated in your
24 evidence that full-tree harvesting facilitates natural
25 regeneration. Did I get that evidence correctly?

1 MR. HOPKINS: A. Yes, on our operation
2 that is true.

3 Q. Can you explain how full-tree
4 harvesting facilitates natural regeneration, please?

5 A. Full-tree harvesting of course
6 removes the tops and branches during the forwarding
7 phase, that leaves the cut-over with less debris and,
8 in our case, when we shear blade in the winter that
9 allows for less interference and less debris to be put
10 in the windrows and provides more -- well, the
11 reduction in slash just assists in the site
12 preparation. That is one area it assists us.

13 It also removes the -- by removing the
14 slash, on some sites actually we can look at that site
15 and determine that it does not need any site
16 preparation at all, and this provides a -- and we plant
17 it directly, so this provides a low cost regeneration
18 technique and eliminates the site preparation phase.

19 Q. The example you gave me of planting
20 would be a situation where full-tree harvesting was
21 facilitating artificial regeneration?

22 A. That's correct.

23 Q. When you said that full-tree
24 harvesting would facilitate an operation that would
25 allow you to do site preparation, would that be

1 facilitating natural regeneration or would that be
2 artificial?

3 A. Well, another example is really the
4 mechanical harvesting system which today, for us, the
5 full-tree mechanical harvesting has been developed.
6 It's the off-road transport phase, and that is with the
7 high flotation tires, has allowed us to use -- protect
8 the advanced growth for instance and, therefore, use
9 the protection of the advanced growth as a way to
10 regenerate the forests on certain lowland black spruce
11 sites.

12 Q. All right. So the comment then that
13 full-tree harvesting facilitates natural regeneration,
14 was that then directed primarily to those lowland black
15 spruce sites where in fact you employed the method you
16 described in your evidence?

17 A. That's correct.

18 Q. Now, Mr. Roll, in giving some of your
19 evidence-in-chief regarding having the flexibility to
20 move from one site to another, and I think the
21 discussion was talking about wanting to move because
22 you wanted to maintain the viability of the site, you
23 made the comment that you move to a less sensitive
24 site, and my question is: Less sensitive in relation
25 to what?

1 MR. ROLL: A. The comment was that we
2 moved from our spring -- we moved our spring operation
3 from the -- is this what you were referring to, when we
4 moved our spring operation into another area and then
5 back into the case study area. We moved from the case
6 study area for the summer and then back in, is that
7 what you are referring to?

8 Q. Yes. I think you were talking about
9 well drained areas during that discussion.

10 A. Yes. The specifics were that we
11 chose the case study area as a spring operating area
12 because of the well drained soils and their operability
13 during that spring period.

14 We chose not to continue operating on
15 that site during the summer, and the summer was dry, a
16 very dry summer, and we moved instead to an area of
17 finer soils, and that is what I was talking about, fine
18 soils tend to become a little more sensitive to things
19 like rutting when they become wet, and that was the
20 reference.

21 Q. So it was less sensitive to rutting
22 in that particular case?

23 A. Exactly.

24 Q. Is there a statement, just generally
25 speaking, Mr. Roll, that if you are talking about --

1 it's difficult to talk about sensitivity or fragility
2 in the area when you talk about whether it is sensitive
3 to rutting or whether it is sensitive compaction or
4 whether it is sensitive to erosion, you have to know
5 what you are talking about the site being sensitive to?

6 A. Yes, that's right.

7 Q. Okay. Mr. Roll, as well during your
8 evidence you were talking - and this is in relation to
9 part No. 1 - you were talking about the jack pine
10 stand, that you were going in and you were harvesting
11 and at one point you talked about taking the younger
12 stands at one point in the timber management plan and
13 taking the older trees later?

14 A. Yes.

15 Q. When you were talking about taking
16 the younger stands, are you able to help me as to the
17 age of those younger trees in relation to the rotation
18 age?

19 A. Yes. I referred to younger stands
20 such as the one in the case study area and they were at
21 approximately 75 years old. On that particular forest
22 the rotation age for jack pine is 70 years.

23 Q. So when you were talking about
24 harvesting the younger stands or you had a desire to
25 take the younger stands, you weren't suggesting that

1 you would harvest the trees that were well below
2 rotation, you were in fact talking about trees which
3 were, in that case, over rotation age?

4 A. Exactly.

5 Q. Thank you. Dr. Methven, can you
6 turn, please, to page 46 of the witness statement which
7 is Exhibit 1121. Do you have that?

8 DR. METHVEN: A. Yes, I do.

9 Q. You started out your
10 evidence-in-chief by quoting most of the first full --
11 first indented portion which begins:

12 "For impact assessment..."

13 A. Yes.

14 Q. And I was just wondering if you could
15 explain to me what you meant by the last two lines of
16 that quote which say:

17 "...placing a system in a straitjacket of
18 constancy can cause fragility
19 to evolve..."

20 A. That's really a reference to systems
21 that have evolved on a continuous impact of what we
22 call disturbance, and as a result of that the mechanism
23 of pulse stability, I guess you can call it for want of
24 a better term, and if we all of a sudden remove those
25 disturbances that pulse stability system has nothing

1 that entrains it and maintains its resilience and its
2 stability and they can become very fragile and
3 basically start to break apart from the system.

4 Q. And fragility in what respect?

5 A. In maintaining the dynamics of the
6 system and the structure and the species composition
7 and the whole complex.

8 Q. Right. So this comment is related to
9 your evidence that you gave I think today where you
10 were talking about what happens where you have a fire
11 prevention system in place but no other disturbance?

12 A. That is correct.

13 Q. You also in your evidence-in-chief
14 used five different species to illustrate renewal
15 agents. You talked about jack pine needing fire for a
16 number of reasons, you went through black spruce, and I
17 have a question I would like to ask you about white
18 pine and red pine that I wasn't too clear on your
19 evidence.

20 With continued fire suppression, do you
21 have any view as to what the fate is of unmanaged white
22 pine and red pine stands?

23 A. Yes. I would have to divide them, of
24 course, between pressure till sites and very dry sands.

25 In the former case, there is a tremendous

1 tendency for invasion in the understory, red maple,
2 hazel, balsam fire and spruce and the two latter
3 species particularly constitute a very major fire
4 hazard and create a fuel continuity from the forest
5 floor up to the crowns of the pine such that the
6 adaptation of pine in terms of its thick bark is no
7 longer operable and when the fires occurs it will
8 totally destroy the crowns of the pines regardless of
9 the thick bark and that will be the end of the pine in
10 that site.

11 Q. All right. And what about on the dry
12 sands?

13 A. The dry sands has much less
14 competition in the understory, there is a much less
15 organic layer on the forest floor and white pine can
16 establish in the understory under those conditions.

17 Q. And am I correct when that occurs
18 that white pine still has to be released and that that
19 release takes place through -- can take place through
20 disturbance of the larger white pine, the destruction
21 of the crowns of the larger white pine?

22 A. Yes or by blowdown or the wind or
23 those kinds of mechanisms.

24 Q. And if the disturbance in that
25 situation does not occur through fire or blowdown, are

1 you able to comment on the fate of the white pine and
2 the red pine?

3 A. I had only seen these stands at the
4 intermediate level where the understorey white pine --
5 the biggest is probably in the range of about 20 feet,
6 so I haven't actually seen it beyond that point, but at
7 that point they were still looking healthy.

8 MADAM CHAIR: Excuse me, Dr. Methven,
9 could you clarify for the Board, we haven't heard the
10 term until yesterday and today when you talked about a
11 crown fire, about the crowns of the trees being
12 involved in the fire. Are you saying as opposed to
13 just the forest floor?

14 DR. METHVEN: Yes.

15 MADAM CHAIR: And just the trunks of the
16 trees?

17 DR. METHVEN: Yes.

18 MADAM CHAIR: That is more of an intense
19 fire, a larger fire and the entire tree up to the crown
20 is burning?

21 DR. METHVEN: That is true, yes.

22 White pine has a long clear bowl and so the crowns are
23 many, many metres above the ground and they never --
24 almost never get involved in a crown fire unless that
25 understorey development has taken place.

1 MADAM CHAIR: Thank you.

2 MR. FREIDIN: Q. Just my clarification,
3 if there is a low intensity fire in a very low
4 understorey in relation to the crowns, is it possible
5 to have a fire -- wild fire actually take place in the
6 understorey but not take place on the crowns?

7 DR. METHVEN: A. Yes. If I may clarify,
8 I've actually conducted several prescribed burns myself
9 that have done precisely that.

10 Q. Thank you.

11 Mr. Murray, you were giving some evidence
12 about the value of logs, veneer logs and No. 1 quality
13 sawlogs. Did I understand you correctly that the
14 values that you gave were the values in the mill yard?

15 MS. MURPHY: A. Yes, Mr. Freidin. Those
16 were approximate prices delivered to the mill yard for,
17 you know, the broad range of quality that you will get
18 within a -- it is just an average range.

19 Q. How does the value of a veneer log or
20 a No. 1 quality sawlog compare coming out the other end
21 of the mill as compared with post-value in the mill
22 yard?

23 A. The value of a No. 1 sawlog or veneer
24 log?

25 Q. Yes.

1 A. It's ultimate product value. You
2 want a percentage? It's significantly more. I mean,
3 the quality of the log gives you the quality product.

4 as an example, all I can tell you is that
5 in, for instance, a maple log, the highest for the
6 select in better lumber, which amounts to some 15 to 25
7 per cent of the log, would sell - and I am not right up
8 to date on it - but it would probably be in the -- kiln
9 dried, about 700, \$650 a thousand; whereas the low
10 grade grade material is probably still only 200 and
11 some odd dollars per thousand.

12 Q. The point I was just trying to make
13 is there is considerable value added?

14 A. There is considerable value added to
15 the quality product, absolutely, veneer particularly,
16 more so than the sawlogs.

17 Q. Thank you. I didn't bring one of the
18 exhibits I wanted to, it was Exhibit 86 but maybe I can
19 deal with it without the --

20 MR. CASSIDY: Well, are the witnesses
21 going to have to look at it?

22 MR. FREIDIN: I don't think they are
23 going to have a look at it.

24 Q. There was a question put to Mr.
25 MacKay but he was unable to answer it. It was the

1 portion that Ms. Swenarchuk read from the FMA
2 agreement -- or the FMA review where the amount of the
3 actual harvest was considerably less than the maximum
4 allowable depletion and there was some indication that
5 notwithstanding that fact there is some concern that
6 the MAD in the future was going to decrease.

7 Now, perhaps I can put it to you, Mr.
8 Roll. It is my understanding that the maximum
9 allowable depletion can decrease in the future even
10 though the amount of the present maximum allowable
11 depletion which is being taken is only, say, 25 or 50
12 per cent?

13 MR. ROLL: A. Yes, that's right.

14 Q. Could you explain to me how that
15 could happen?

16 A. It could happen because of natural
17 events, removing or changing the age-class structure,
18 and I would refer to some of Dr. Methven's modelling
19 yesterday referring to the age-class structure and if a
20 great portion of the age class is out of the portion of
21 the yield curve that gives maximum yield you won't have
22 that material to be able to harvest. So that's one
23 means.

24 The other means are withdrawals for
25 non-timber use, parks and so on. They can remove from

1 the land base.

2 Q. All right. So just going to the very
3 first one then, if you start with an overmature forest
4 where you have a high maximum allowable depletion
5 calculated today, in 20 years from now even, if you
6 harvested nothing, if all of that older age class fell
7 over and went back to the younger age classes the
8 maximum allowable depletion that you would calculate 20
9 years from now may be considerably lower. Is that
10 correct, Mr. Roll?

11 A. Yes, it is. In essence the stand
12 falling apart and reverting to younger age classes
13 would cause that same thing, yes.

14 Q. And is that -- do you agree with
15 that, Dr. Methven.

16 DR. METHVEN: A. Yes, I do.

17 Q. Thank you.

18 MR. MacKAY: Mr. Freidin, for the Board's
19 information that was Exhibit 68 not 86.

20 MR. FREIDIN: All right, thank you.

21 Q. Now, Dr. Methven, during the
22 cross-examination of you by Ms. Swenarchuk she asked
23 you a question and my notes indicate it was along the
24 following lines: Constraint management of 130 hectares
25 and what it is doing to the landscape was the subject

1 matter of questions and she said: Are you assuming
2 that harvesting in Ontario is restricted to 130
3 hectares and you said yes.

4 Now, I take it from your evidence today,
5 Dr. Methven, and reading your report in total that when
6 you say that clearcutting is acceptable you are not
7 restricting that comment to clearcuts of any specific
8 size. Is that a fair understanding of your evidence?

9 DR. METHVEN: A. Yes.

10 Q. You were also, Dr. Methven, asked
11 some questions regarding the distribution of fire sizes
12 in Ontario and I think reference was to page 47 of the
13 witness statement?

14 A. Yes.

15 Q. You may recall Ms. Swenarchuk was
16 asking you a number of questions and trying to come up
17 with an average number in terms of the size of the fire
18 and my question for you is: If you come up with a
19 numerical average -- first of all, do you agree that
20 that was really what she was doing when she was doing
21 all that number function?

22 A. Yes. I said you've divided the
23 hectares by the number of fires, yes.

24 Q. All right. Now, if you come up and a
25 numerical average, as she did, does that really help us

1 get a realistic picture of the actual size distribution
2 of fires in Ontario?

3 A. That kind of calculation is a classic
4 case of the meaningless average. Particularly in
5 management it is absolutely crucial that we don't
6 manage by averages, we must manage by distributions and
7 a proper appreciation of that distribution.

8 In the case of fires, of course, you
9 could end up with a relatively low average because
10 there is a lot of small fires. The fact is that most
11 of the landscape is burnt by large fires and it's that
12 distribution that's important.

13 Q. Thank you. You also gave some
14 evidence about the fires that we have today being
15 1/10th or 1/20th of the fires which would have occurred
16 without fire suppression. Do you recall giving that
17 evidence?

18 A. That was on the basis of area. I am
19 not sure what it is on numbers.

20 Q. All right. That was the question I
21 wanted to ask. This was 1/10th or 1/20th of the
22 area -- pardon me, the area then of the fires we have
23 today with fire suppression is 1/10th to 1/20th of the
24 area which would be burned as a result of uncontrolled
25 wild fires?

1 A. The uncontrolled wild fires that have
2 historically occurred, yes.

3 Q. Thank you. If could you refer,
4 please, to page 51 of the witness statement. Ms.
5 Swenarchuk again asked you some questions on this page
6 and I take you down to about five or six -- four or
7 five lines up from the bottom where there is reference
8 to an opening size of 0.1 hectares?

9 A. Yes.

10 Q. And you indicate there in that
11 sentence:

12 "...the reproduction method represent a
13 continuum of opening sizes and
14 distributions from 0.1 hectare to
15 thousands of hectares depending on the
16 precise management objectives in terms of
17 the species to be favoured and economic
18 realities."

19 When you were referring to an opening
20 size of 0.1 hectares, were you referring to a situation
21 which is commonly found in the boreal forest or were
22 you referring to the sort of opening that you might get
23 in a different situation?

24 A. No, I was really thinking in terms of
25 more subtlety forests in parts of the Great Lakes/ St.

1 Lawrence forest as described by Mr. Murray.

2 Q. So in this whole paragraph and in
3 terms of describing the continuum of opening sizes, you
4 were talking about the continuum of opening sizes from
5 those in the Great Lakes/St. Lawrence where you may be
6 doing selection cutting to the larger -- to
7 clearcutting in the the boreal forest?

8 A. That is true, although individual
9 trees can die in the boreal forest but it doesn't
10 result in regeneration in the way that it's required.

11 Q. I asked the question because Ms.
12 Swenarchuk said and you agreed that there would be --
13 very little would involve .1 hectare clearcuts and I
14 guess you were just agreeing, you weren't even talking
15 about clearcuts when you were talking about 0.1 area
16 openings?

17 A. Certainly not.

18 Q. Thank you. A few questions, sticking
19 with you, Dr. Methven, about full tree harvesting. A
20 question put to you by Ms. Swenarchuk was, full tree
21 fails to leave natural seed source on a site.
22 She asked you: Does full tree fail to leave natural
23 seed source on a site and you said yes.

24 My questions for you is, would you agree
25 that that does not mean -- there can still be seed

1 source from an adjacent stand?

2 A. That is true, yes.

3 Q. There could also be a seed source
4 provided artificially, aerial seeding for example?

5 A. Very much so, yes.

6 Q. There could also be regeneration on
7 that site through advanced regeneration?

8 A. Yes.

9 Q. If none of those were available you
10 you could full-tree harvest, not of a seed source, but
11 still regenerate the site satisfactorily through the
12 artificial regeneration means of planting?

13 A. Yes.

14 Q. So the fact that full-tree tree may
15 fail to leave a natural seed source on the site doesn't
16 mean that somehow that site is at a disadvantages in
17 terms of its ability to regenerate in an acceptable
18 manner?

19 A. It certainly does not impair our
20 ability to regenerate that site, no.

21 Q. Thank you. In terms of again
22 nutrient cycling now and full-tree harvesting, I think
23 I got your evidence down correctly, I just want to make
24 sure that I do.

25 Did you say that in terms of the

1 available pools harvesting effects little in terms of
2 the total pools?

3 A. That was my statement, yes.

4 Q. And the total pools which you refer
5 to then which are in addition -- what part of the total
6 pools -- what makes up the total pools other than the
7 trees that you were talking about?

8 A. We could identify four I suppose.
9 The tree themselves, the understorey, vegetation which
10 of course differs site from site, the organic layer of
11 the forest floor and finally the mineral soil.

12 Q. If I can get back to your witness
13 statement again, page 57.

14 MR. CASSIDY: What page?

15 MR. FREIDIN: Page 57.

16 MR. CASSIDY: Thank you.

17 MR. FREIDIN: Q. I am going to deal with
18 the same clause that a number of people have dealt with
19 and that is the first full paragraph, the last three
20 lines. Ms. Swenarchuk was asking you about those and
21 she asked you whether it is your view that whole tree
22 harvesting not be limited at this time and you said
23 yes, that was your position and can you explain to me
24 why that is your position?

25 A. This is my judgment I guess based on

1 the current scientific evidence on nutrients and
2 nutrient removal and pool qualities.

3 The uncertainties all derive of course
4 from our understanding of the dynamics within the soil,
5 within the tree, the fluxes between the different
6 pools; for example, a single molecule could be used ten
7 times over but you wouldn't know it.

8 But my judgment based on what we do know
9 is that it would be still okay to perform full-tree
10 harvesting. That was of course based also on my
11 analysis of the landscape dynamics, the continual
12 disruption of nutrient dynamics and cycles due to
13 disturbances or renewal agents and, therefore, this
14 full-tree harvesting did not fall outside those
15 parameters.

16 Q. Now, Dr. Methven, are you aware --
17 you referred to a Foster and Morrison paper in your
18 witness statement. In panel No. 10 of the Ministry of
19 Natural Resources there was a discussion of full-tree
20 harvesting and in particular there were a number of
21 articles referred to and the one article I want to
22 refer you to is an article which is found at page 451
23 of that. Do you have a copy of that?

24 MR. CASSIDY: Is that Volume 1 or 2?

25 MR. FREIDIN: Volume No. 1.

1 Q. Do you have that page, 451. It's a
2 paper by Timmer, Savinsky and also Mr. Merritt?

3 A. Yes.

4 Q. And I am asking you to turn your
5 attention to that because during the evidence of Mr.
6 Armson he referred to this particular document. He
7 said that this was the one particular paper that was
8 reproduced that made a very definite recommendation
9 regarding full-tree harvesting and could you tell me,
10 were you aware of this paper before I just referred you
11 to it?

12 A. Yes, this is one of the several
13 papers that are commonly referred to.

14 Q. So your opinion that full-tree
15 harvesting need not be limited was made in full
16 knowledge of this paper?

17 A. Yes, this one paper in association
18 with the others.

19 Q. And do you agree with Mr. Armson that
20 this particular paper made a very definite
21 recommendation concerning full-tree harvest? It made a
22 number of them in fact?

23 A. Yes, it did.

24 Q. And I take it then that the specific
25 recommendation in that paper was not sufficient to

1 cause you to have -- to change your view or to come to
2 the view that full-tree harvesting be limited?

3 A. No, I didn't think it was
4 sufficiently supported.

5 Q. Is there any particular reason that
6 you did not think it was particularly supportive of the
7 proposition that full-tree harvesting be limited?

'8 A. That's a conclusion I came to some
9 time ago. I really haven't read it in detail recently.

10 Q. If I could just have one moment,
11 I think I can leave that and we won't have to -- I am
12 satisfied with your opinion, unless you wish to add the
13 basis upon which you some time ago came to that
14 opinion. If you do it now, that's fine; if not...

15 A. No, I can't specify precisely at this
16 point.

17 Q. All right, thank you.

18 Mr. Roll, your counsel may have asked you
19 to have Volume 189 of the transcripts with you. I
20 guess...

21 MR. CASSIDY: I never got a chance.

22 MR. FREIDIN: No. Again, it's very
23 short. I don't know, maybe the Board doesn't even have
24 it.

25 MADAM CHAIR: Yes, we do.

1 MR. FREIDIN: The Board does have it.

2 Q. Let me just read to you. It's very
3 brief, Mr. Roll, I think you will be able to follow
4 along.

5 MR. FREIDIN: I am going to refer, Madam
6 Chair, to Volume 189, page 33350 and this was during
7 the examination of Mr. Saltarelli in Panel No. 3.

8 Q. And prior to the section that I am
9 going to refer to, Mr. Roll, there was some
10 cross-examination by counsel for the Ministry of the
11 Environment of Mr. Saltarelli regarding a protection
12 forest and protection forest re serve, and at page
13 33350, Madam Chair stated, starting at line 6 - this is
14 to Mr. Saltarelli:

15 "You said that it is up to the
16 professional forester to determine if he
17 has adequate information with respect to
18 the FRI requirements on timber values."
19 Mr. Saltarelli said:

20 "That's correct."

21 And then Madam Chair asked:

22 "When it comes to non-timber values, do
23 you feel that's beyond the judgment of
24 the forester to determine if he has
25 absolute data, he must await direction

1 from the MNR and other wildlife
2 biologists..." et cetera, Mr. Saltarelli
3 indicated:

4 "Yes, it would be reasonable to rely on
5 biologists and perhaps other direction
6 from MNR in those matters."

7 I want to go back to the question about
8 timber values, again the question was:

9 "You said that it is up to the
10 professional forester to determine if he
11 has adequate information with respect to
12 the FRI requirements on timber values."
13 Mr. Saltarelli:

14 "That's correct."

15 My question for you, Mr. Roll, is: In
16 your view, is a decision as to whether the productivity
17 of a particular site will be adversely affected by
18 timber management activities a matter for the
19 professional forester to determine based on his or her
20 assessment of the adequacy of timber value information?

21 MR. ROLL: A. Yes.

22 Q. And why do you think that?

23 A. Because of the on-site knowledge of
24 the relationships between trees, the tree form, tree
25 size to those sites.

1 Over years of experience, a professional
2 forester and in fact non-professionals within our
3 Industry come to recognize a relationship between tree
4 form and size and so on and that particular kind of a
5 site.

6 Q. Thank you.

7 MR. FREIDIN: If I might, Madam Chair, I
8 would like to file as an exhibit Interrogatory No. 6
9 from the Ontario Ministry of Natural Resources for this
10 particular panel.

11 MS. BLASTORAH: (handed)

12 MADAM CHAIR: Is that 11256. One moment,
13 1126.

14 ---EXHIBIT NO. 1126: MNR Interrogatory Question No. 6
15 for OFIA/OLMA Panel 6.

16 MR. FREIDIN: Q. You will note, Dr.
17 Methven -- do you have a copy of that particular
18 interrogatory?

19 DR. METHVEN: A. Yes, I do.

20 Q. And you will see that that particular
21 interrogatory arises out of page 54 of the witness
22 statement which was the portion authored by yourself,
23 and it's in relation to the comment made in the middle
24 of the paragraph, halfway down, starting down the
25 left-hand margin:

1 "Ecologically, therefore, there is no
2 limit to the sizes of clearcut that can
3 be enclosed within a perimeter as long as
4 a minimum amount of cover is retained."

5 And there was reference also made to
6 stringers and islands of surviving trees if they
7 remained within the perimeter of a fire area, or area
8 of harvest operations. And was the answer to this
9 interrogatory an answer that was prepared by you?

10 A. Yes.

11 Q. So you agree, therefore, that without
12 design a stringer or stringers or islands may not be
13 the right species present in the right amount or in the
14 desired location to provide non-timber values which
15 managers may want to accommodate and/or protect?

16 A. That's right.

17 Q. So if you had a specific wildlife
18 objective for a particular area, the residuals that may
19 be left because of operational difficulties may not be
20 enough, you may actually have to go a little bit
21 further and leave residuals or vegetation which in fact
22 was designed in terms of its location or its spacial
23 and temporal pattern?

24 A. Absolutely, yes.

25 Q. Thank you.

1 Mr. Roll, you were asked a number of
2 questions by Mr. Hanna regarding compaction and the
3 concern that the Industry has about that subject
4 matter.

5 You were also asked whether you would
6 support certain studies being instituted in that regard
7 and you gave a response basically negative in nature.

8 Do you happen to have the OFAH terms and
9 conditions in front of you?

10 MR. ROLL: A. I can get them.

11 Q. They were marked as an exhibit.

12 MR. CASSIDY: I am not sure that was the
13 evidence, that it was of a negative nature. The
14 witness correct me if it's wrong.

15 MR. FREIDIN: All right. Well, I --
16 don't answer the question.

17 MADAM CHAIR: Mr. Hanna?

18 MR. HANNA: My understanding of the
19 question I asked Mr. Roll was: Is he aware of any
20 studies that have been done to this effect, but I do
21 not believe I asked him if he would support or not
22 support those types of studies.

23 MR. ROLL Yes, that's right.

24 MR. FREIDIN: Q. And you don't have them
25 there, Mr. Roll?

1 MR. ROLL: A. Yes. Which ones are you
2 referring to?

3 Q. I want you to turn to page 26. It's
4 Exhibit 1125. Do you have that?

5 A. Yes.

6 Q. There are two recommendations, two
7 draft terms and conditions 152 and 153 that deal with
8 soil compaction. Would you just take a moment to read
9 them, or are you familiar with those?

10 A. I have read them over previously, but
11 I should take some time.

12 Q. Okay, please do.

13 A. Yes.

14 Q. Could you advise me: Does Industry
15 support those suggested terms and conditions?

16 A. No, I wouldn't think that that was
17 necessary given my experience.

18 Q. And are you able to -- did you in
19 your evidence indicate the reasons that you believed
20 those particular terms and conditions would not be
21 supported?

22 A. It's my experience that soil
23 compaction in general isn't a major issue in the area
24 of the undertaking. I believe that the issue is
25 addressed specifically in the Clay Belt areas where

1 soils are -- some are finer and somewhat more sensitive
2 to compaction but, other than that, it's my experience
3 that it's not a large issue and the results of the
4 options that I have seen have shown no indication that
5 this kind of activity would be required.

6 Q. Dr. Methven, are you aware of the
7 number of forest management units that there are in the
8 area of the undertaking? I can tell you that there are
9 a hundred. All right. Were you aware of that?

10 DR. METHVEN: A. No, I was not.

11 Q. All right. Accepting I am correct,
12 there are approximately a hundred - maybe 99 - we have
13 heard a lot of discussion today I guess and yesterday
14 about the need to learn, to assess the effects of
15 activities on the environment, to adapt based on what
16 we learn, and I think that is a proposition that you
17 accept as being valid?

18 A. Yes.

19 Q. And would you agree with me, Dr.
20 Methven, that the geographical area upon which you
21 might want to do that study, or a study or the spacial
22 distribution of a number of different areas that you
23 may want to do a study in order to learn, would depend
24 on the specific issue that you were dealing with?

25 A. Yes.

1 Q. Would you, therefore, agree with me
2 that if one wants to learn and to assess the effects of
3 timber management activities, adapt based on what you
4 learned, that it is not necessary to conduct those
5 studies in every timber management plan on every
6 management unit, all hundred of them, for every item
7 about which you want to learn, but rather that that
8 knowledge could and should be gained through properly
9 designed scientific research at whatever geographical
10 location the scientist thinks is appropriate and then
11 take what you learn and transfer that information to
12 the field?

13 A. Yes. Our ability to do research of
14 course is limited by both manpower and dollars, so you
15 have to choose very carefully where we do these studies
16 and do these research projects, and then we have to
17 take that information and apply it as best we can.

18 I might also add that adaptive management
19 in itself is in a sense experimental management which
20 takes certain actions with certain quantitative
21 objectives and continually measures how it's moving
22 towards those objectives and, therefore, learn.

23 So there is a lot of learning in terms of
24 how the system dynamics work in the management process
25 itself to complement that basic scientific research so

1 the two together give you the whole picture.

2 MR. FREIDIN: Thank you. Those are my
3 questions, Madam Chair.

4 MADAM CHAIR: Thank you very much, Mr.
5 Freidin.

6 Mr. Martel wants to know if you can
7 complete your cross-examination in 12 minutes, Ms.
8 Seaborn?

9 MS. SEABORN: I could probably get
10 organized in 12 minutes to begin.

11 I can advise the Board my original
12 estimate for this panel was two to three hours and I
13 think three should do it.

14 So assuming I start at 8:30 on May 1st, I
15 will be able to finish in time to commence with Panel
16 7, subject of course to Mr. Cassidy's re-examination.

17 MR. CASSIDY: At this point I anticipate
18 being about half an hour in re-examination, and if I
19 could please ask Dr. Methven to review the timber
20 Timmer and Merrick article in advance of my
21 re-examination, I may or may not have some further
22 questions by way of follow-up on that.

23 I can't talk to him, so this is the only
24 way I can ask him to review the material in advance.

25 MADAM CHAIR: The Board can direct Dr.

1 Methven to do that.

2 MR. CASSIDY: Thank you.

3 MADAM CHAIR: Is that it for this week
4 then?

5 MR. CASSIDY: It's been a full week I
6 believe, Madam Chair.

7 MADAM CHAIR: Yes, it has.

8 Well, we will adjourn and be back in
9 Thunder Bay at 8:30 Tuesday, May the 1st.

10 Thank you.

11 ---Whereupon the hearing adjourned at 2:50 p.m., to be
12 reconvened on Tuesday, May 1st, 1990, commencing at
8:30 a.m.

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